IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

STATE OF NEW YORK, *et al*.,	)	
Plaintiffs,	)	
v.	)	Civil Action No. 98-1233 (CKK)
MICROSOFT CORPORATION,	)	
Defendant.	)	Next Court Deadline: June 19, 2002 Remedies Hearing

PLAINTIFF LITIGATING STATES'
PROPOSED CONCLUSIONS OF LAW

I. Procedural Background

A. Initial Liability Proceedings

On May 18, 1998, the Department of Justice and a group of twenty states and the District of Columbia filed separate (later consolidated) antitrust suits against Microsoft Corporation. A 76-day bench trial began on November 5, 1999, after which the District Court entered detailed findings of fact concerning plaintiffs' allegations and Microsoft's conduct. *United States v. Microsoft Corp.,* 84 F. Supp. 2d 9 (D.D.C. 1999). After unsuccessful efforts at mediation, the District Court entered its Conclusions of Law on April 3, 2000, finding Microsoft liable for unlawfully maintaining a monopoly of the market for Intel-compatible PC operating systems in violation of § 2 of the Sherman Act, unlawfully attempting to monopolize the market for Internet browsers in violation of § 2, and unlawfully tying its browser, Internet Explorer, to its monopoly operating system, in violation of § 1 of the Sherman Act. *United States v. Microsoft Corp.,* 87 F. Supp. 2d 30 (D.D.C. 2000) *aff'd in part & rev'd in part, 253 F.3d 34, cert. denied*, 122 S. Ct. 350 (2001). The District Court found insufficient evidence to support plaintiffs' exclusive dealing claim under § 1. The District Court also found that Microsoft had violated the State antitrust laws of the plaintiff States, including those State statutes that required a showing of an impact on intrastate commerce. *Id.* at 54-56. Following a non-evidentiary hearing, the District Court entered its Final Judgment on June 7, 2000, including remedial provisions mandating a divestiture of Microsoft's applications business from its operating system business. *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59 (D.D.C. 2000), *vacated*, 253 F.3d 34.

B. Court of Appeals Decision

After extensive briefing and two days of oral argument, the Court of Appeals, in a

unanimous *en banc* decision, affirmed in substantial part the judgment that Microsoft had violated § 2 of the Sherman Act by unlawfully maintaining its monopoly of the Intel-compatible PC operating system market, reversed the determination that Microsoft had attempted to monopolize the Internet browser market, and remanded the tying claim under § 1 of the Sherman Act for determination under a rule of reason standard. *Microsoft*, 253 F.3d 34 (2001). The Court also vacated the Final Judgment as to remedy in all respects for four separate reasons: (1) the failure of the District Court to conduct a remedies-specific evidentiary hearing, (2) the failure of the District Court to provide an adequate explanation of the remedies it had chosen in terms of the governing criteria, (3) the revision in the determinations as to the scope of Microsoft's liability, and (4) the appearance of partiality by the then trial judge. *Id.* at 98, 117.

C. Remedy Proceedings on Remand

After the Court of Appeals issued its mandate on August 24, 2001, the case was reassigned to this Court. On September 6, 2001, the plaintiffs advised Microsoft that they did not intend to pursue the rule of reason tying claim that had been remanded by the Court of Appeals and that they did not intend to seek divestiture as a remedy. On September 28, 2001, this Court ordered a round of settlement negotiations to determine if the matter could be resolved. On November 2, 2001, Microsoft and the U.S. Department of Justice ("DOJ") announced that they had reached a settlement. On November 6, 2001, nine of the original State plaintiffs also settled with Microsoft. The other nine remaining State plaintiffs, namely California, Connecticut, Florida, Iowa, Kansas, Massachusetts, Minnesota, Utah, West Virginia, and the District of Columbia (hereafter "Plaintiff States"), however, indicated their intention to continue litigating the question of the appropriate remedy for Microsoft's violation of the antitrust laws.

Thereafter, the Court by order separated these matters into two tracks: Track I,

Civ. Ac. No. 98-1232, *United States v. Microsoft Corp*., consisted of the Court's review under the Antitrust Procedures and Penalties Act ("Tunney Act"), 15 U.S.C. § 16 (b)-(h), of the settlement between the DOJ and Microsoft, and Track II, Civ. Ac. No. 98-1233, *State of New York, et al. v. Microsoft Corp*., referred to the continuing remedy litigation between the Plaintiff States and Microsoft.

Following a period of discovery and various other pretrial proceedings, a remedies-specific evidentiary hearing commenced on March 18, 2002. The Court received direct testimony in written form from fifteen witnesses on behalf of the Plaintiff States, and nineteen witnesses on behalf of Microsoft. Live cross-examination and redirect examination, as well as various other proceedings, occupied more than thirty-two days of court time. On June 10, 2002, the parties submitted their Proposed Findings of Fact and Conclusions of Law. Final argument was heard by the Court on June 19, 2002.

D. Plaintiff States Are Appropriate Parties To Seek Injunctive Relief

By motion filed at the close of plaintiffs' case, Microsoft argued that the Plaintiff States are entitled to no relief because, among other things, they have not demonstrated the requisite harm and threatened harm to their general economies to justify injunctive relief to the States suing in their *parens patriae* capacity. The issues of whether the Plaintiff States suing in their *parens patriae* capacity have suffered antitrust injury and are threatened with harm sufficient to justify injunctive relief were in fact decided in prior liability proceedings and affirmed by the Court of Appeals.

The District Court previously found that Microsoft's violation of the antitrust laws has harmed consumers, companies, and competition itself in each of the Litigating States. *Microsoft*, 84 F. Supp. 2d at 110-12, Findings Nos. 408-12; *Microsoft,* 87 F. Supp. 2d at 55. Microsoft's antitrust violations "have harmed consumers in ways that are immediate and easily

discernible. They have also caused less direct, but nevertheless serious and far-reaching, consumer harm by distorting competition." *Microsoft*, 84 F. Supp. 2d at 111, Finding No. 409. "It is equally clear that certain companies that have been adversely affected by Microsoft's anticompetitive campaign . . . transact business in, and employ citizens of, each of the plaintiff states." *Microsoft*, 87 F. Supp. 2d at 55. The Court of Appeals affirmed this aspect of the District Court's rulings. *Microsoft*, 253 F.3d at 46 ("Our judgment extends to the District Court's findings with respect to the state law counterparts of the plaintiffs' Sherman Act claims.").

To the extent any independent evaluation of this issue were necessary, however, there can be no serious doubt that the Plaintiff States are entitled to injunctive relief here. The harm Microsoft has caused to consumers and others is likely to continue unless competition is restored through effective remedial proposals. *See*, e.g., Shapiro Direct Testimony (PX 1847) ("Shapiro Dir.") ¶ 24. Thus, the Litigating States, seeking to protect the well-being of their general economies, are proper parties to seek injunctive relief for Microsoft's violation of the antitrust laws.

E. Continued Effects of Prior Findings and Conclusions

Microsoft has argued that the District Court's Findings of Fact not directly related to one of the exclusionary acts affirmed by the Court of Appeals as unlawful monopoly maintenance are of no continuing effect or relevance to this remedy proceeding. *See* Defendant Microsoft Corporation's Memorandum Regarding Reliance on Findings of Fact Not Passed Upon by the Court of Appeals. Microsoft has never identified precisely which of the District Court's 411 Findings of Fact it believes warrant exclusion from consideration here. The Court concludes, however, that any Findings of Fact from the liability proceedings not specifically reversed by the Court of Appeals remain intact and part of this case, subject to a showing by one

of the parties that such Finding is relevant to the remedy issues now before the Court.

The Conclusion of Law concerning incentives and threats to OEMs, which is premised on Findings of Fact Nos. 230-38, and which was not discussed by the Court of Appeals, stands on a slightly different footing. *Microsoft,* 87 F. Supp. 2d at 39 ("incentives and threats to induce especially important OEMs . . . to favor Internet Explorer"). Microsoft failed to appeal this Conclusion in its prior appeal, making this conclusion binding as law of the case. *See, e.g.*, *Williamsburg Wax Museum* v. *Historic Figures, Inc.*, 810 F.2d 243, 250 (D.C. Cir. 1987) ("[A] legal decision made at one stage of litigation, unchallenged in a subsequent appeal when the opportunity to do so existed, becomes the law of the case for future stages of the same litigation, and the parties are deemed to have waived the right to challenge that decision at a later time.").

Ultimately, however, it is not necessary for purposes of the remedy determination for this Court to decide whether these acts were properly treated as another independent basis for liability under § 2 of the Sherman Act. Both sides have submitted proposed remedies that provide detailed limits on Microsoft's dealings with OEMs. Given the factual findings from the liability proceedings, as well as the other affirmed bases of liability, this Court is able to determine the appropriate remedial provisions as to Microsoft's relations with OEMs without deciding whether these "incentives and threats" should be treated as anticompetitive acts that violate § 2 of the Sherman Act.

II. The Liability Case: Unlawfully Maintaining a Monopoly by Thwarting the Development of Nascent Platform Threats

A. The Applications Barrier to Entry Protects Microsoft's Monopoly in the Market for Intel-compatible PC Operating Systems

As the Court of Appeals recognized, monopoly power necessarily involves "a dominant share of a relevant market *that is protected by entry barriers.*" *Microsoft*, 253 F.3d at

51 (emphasis supplied); *see also id.* at 82 ("a firm cannot possess monopoly power in a market unless that market is also protected by significant barriers to entry"). Without some barrier to new entrants, there can be no effective monopoly, no matter how high current market share may be, "because of the possibility of competition from new entrants . . . ." *Id.* at 54.

The Court of Appeals further explained that in this case, the critical obstacle keeping new firms from entering the Intel-compatible personal computer ("PC") operating system market and undercutting Microsoft is what has come to be called the "applications barrier to entry":

> That barrier—the "applications barrier to entry"—stems from two characteristics of the software market: (1) most consumers prefer operating systems for which a large number of applications have already been written; and (2) most developers prefer to write for operating systems that already have a substantial consumer base. This "chicken-and-egg" situation ensures that applications will continue to be written for the already dominant Windows, which in turn ensures that consumers will continue to prefer it over other operating systems.

Microsoft, 253 F.3d at 55 (citation omitted). Unless a new entrant to the operating system market can overcome these dual tendencies that favor the dominant incumbent firm, it has little chance to attract the consumers or the independent software developers necessary to compete effectively with Microsoft and the Windows operating system.

The evidence during the liability proceeding established how difficult it has been for other PC operating systems to overcome the applications barrier to entry. Even OS/2, an operating system developed and funded by IBM, and Linux, an operating system supported by the open-source development community have been unable to overcome this hurdle. *See Microsoft,* 84 F. Supp. 2d at 22, Finding No. 46 (OS/2); *id.* at 22-23, Findings Nos. 48, 50-51 (Linux). No other PC operating system, in short, has been able to develop the critical mass of consumers and of software developers writing applications so that it can provide meaningful

competition to Windows.

The District Court and the Court of Appeals recognized that there is another type of software, referred to as "middleware," that can serve the critical function of being a platform for applications development:

> Operating systems also function as platforms for software applications. They do this by "exposing"—*i.e.,* making available to software developers—routines or protocols that perform certain widely-used functions. These are known as Application Programming Interfaces, or "APIs." . . .
>
> "Middleware" refers to software products that expose their own APIs. Because of this, a middleware product written for Windows could take over some or all of Window's valuable platform functions—that is, developers might begin to rely upon APIs exposed by the middleware for basic routines rather than relying upon the API set included in Windows. . . . Ultimately, if developers could write applications relying exclusively on APIs exposed by middleware, their applications would run on any operating system on which the middleware was also present. Netscape Navigator and Java—both at issue in this case—are middleware products written for multiple operating systems.

Microsoft, 253 F.3d at 53 (citations omitted).[1] Middleware is so critical precisely because of its potential to undermine the applications barrier to entry:

> Of course, were middleware to succeed, it would erode the applications barrier to entry. Because applications written for multiple operating systems could run on any operating system on which the middleware product was present with little, if any, porting, the operating system market would become competitive.

Id. at 55.

B. Microsoft's Attack on Navigator and Java, Two Nascent Middleware Platform Threats that Could Have Eroded the Applications Barrier to Entry

The Court of Appeals detailed how Microsoft's attack on Netscape's browser

[1] The District Court described middleware in the following terms: "Operating systems are not the only software programs that expose APIs to application developers. Netscape's Web browser and Sun Microsystems, Inc.s Java class libraries are examples of non-operating system software that do likewise. Such software is often called 'middleware' because it relies on the interfaces provided by the underlying operating system while simultaneously exposing its own APIs to developers. . . ." *Microsoft,* 84 F. Supp. 2d at 17, Finding of Fact No. 28.

middleware enabled Microsoft to maintain its PC operating system monopoly:

> Browser usage share is important because, as we explained in Section II.A above, a browser (or any middleware product, for that matter) must have a critical mass of users in order to attract software developers to write applications relying on the APIs it exposes, and away from the APIs exposed by Windows. Applications written to a particular browser's APIs, however, would run on any computer with that browser, regardless of the underlying operating system. . . . If a consumer could have access to the applications he desired—regardless of the operating system he uses—simply by installing a particular browser on his computer, then he would no longer feel compelled to select Windows in order to have access to those applications; he could select an operating system other than Windows based solely upon its quality and price. In other words, the market for operating systems would be competitive.

Microsoft, 253 F.3d at 60. In other words, to preserve its operating system monopoly, Microsoft had to be sure that Navigator and Java lacked the market share necessary to achieve critical mass in the marketplace:

> Therefore, Microsoft's efforts to gain market share in one market (browsers) served to meet the threat to Microsoft's monopoly in another market (operating systems) by keeping rival browsers from gaining the critical mass of users necessary to attract developer attention away from Windows as the platform for software development.

Id. at 60.

The Court of Appeals' opinion details the particular anticompetitive means that Microsoft used to ensure that Navigator and Java were prevented from eroding the applications barrier to entry. With respect to Navigator, Microsoft's tactics included: licensing restrictions on OEMs to prevent their distributing and promoting Navigator, *Microsoft*, 253 F.3d at 59-64; "integrating" Internet Explorer ("IE") and Windows by commingling code to make removal of Microsoft middleware infeasible and eliminating IE from the Add/Remove Programs utility in Windows, *id.* at 64-67; agreements with Internet Access Providers ("IAPs") to promote and distribute IE to the exclusion or virtual exclusion of Navigator, *id.* at 67-71; and dealings with ISVs that led to the exclusive or nearly exclusive promotion of IE *id.* at 71-72, and threats against Apple that resulted in an exclusive deal with Apple that helped foreclose Navigator from

Macintosh based PC desktops. *Id*. at 73-74 With respect to Java, Microsoft's tactics included: so-called "First Wave" agreements with ISVs to make their applications rely on the Microsoft Java Virtual Machine ("JVM"), rather than a JVM compliant with Sun's version of Java, *id.* at 75, deceiving developers regarding the Windows-specific nature of the Java development tools offered by Microsoft, *id.* at 76; and threatening to withdraw its support for Intel's technologies to force Intel to abandon its efforts to develop a high-performance, cross-platform version of Java *id.* at 77.

C. Microsoft's Unlawful Monopoly Maintenance Had a Significant Adverse Effect on Navigator and Java, Competition and Consumers

1. The District Court and the Court of Appeals Found that Microsoft's Actions Had Significant Adverse Effects

a. District Court

At the time Microsoft embarked on its anticompetitive efforts to retard the growth of Navigator and Java, Microsoft clearly viewed these technologies as critical threats to its platform dominance. *See,* e.g., GX 337 (also identified as PX 2009) at MS7 007443 (Mr. Gates: "The company [Netscape] hopes that its browser will become a de facto standard for software development, ultimately replacing Windows as the mainstream set of software standards."); GX 354 (also identified as PX 2018) at MS6 6012955 (Mr. Gates: "I am still wondering how explicit their [Netscape's] plans are to go all the way and become a full blown operating system with scheduling, printing, local storage management and drivers.").

As the District Court previously found, Microsoft's actions directed at Netscape and Java had a variety of adverse effects on competition and consumers:

> To the detriment of consumers, however, Microsoft has done much more than develop innovative browsing software of commendable quality and offer it bundled with Windows at no additional charge. As has been shown, Microsoft also engaged in a concerted series of actions designed to protect the applications barrier to entry, and hence its monopoly power, from a variety of middleware threats, including Netscape's Web

> browser and Sun's implementation of Java. Many of these actions have harmed consumers in ways that are immediate and easily discernible. They have also caused less direct, but nevertheless serious and far-reaching, consumer harm by distorting competition.

Microsoft, 84 F. Supp. 2d at 111, Finding No. 409.

The District Court concluded as follows with respect Microsoft's impact on Navigator and Java:

> Many of the tactics that Microsoft has employed have also harmed consumers indirectly by unjustifiably distorting competition. The actions that Microsoft took against Navigator hobbled a form of innovation that had shown the potential to depress the applications barrier to entry sufficiently to enable other firms to compete effectively against Microsoft in the market for Intel-compatible PC operating systems. That competition would have conduced to consumer choice and nurtured innovation. The campaign against Navigator also retarded widespread acceptance of Sun's Java implementation. This campaign, together with actions that Microsoft took with the sole purpose of making it difficult for developers to write Java applications with technologies that would allow them to be ported between Windows and other platforms, impeded another form of innovation that bore the potential to diminish the applications barrier to entry. There is insufficient evidence to find that, absent Microsoft's actions, Navigator and Java already would have ignited genuine competition in the market for Intel-compatible PC operating systems. It is clear, however, that Microsoft has retarded, and perhaps altogether extinguished, the process by which these two middleware technologies could have facilitated the introduction of competition into an important market.

Id. at 111-12, Finding No. 411.

b. Court of Appeals

The Court of Appeals also explicitly considered the issue of the effect of Microsoft's actions. In determining which of Microsoft's practices were anticompetitive for purposes of § 2 of the Sherman Act, the Court of Appeals engaged in a multi-step analysis, beginning with the questions of whether the plaintiffs had proven that the conduct had a significant anticompetitive effect and, if so, whether Microsoft had demonstrated any procompetitive business justification for its actions. *Microsoft*, 253 F.3d at 58-59. In the case of Microsoft's restrictions on Internet content providers ("ICPs"), for example, the Court concluded that the showing of anticompetitive effect was too slight for the agreements in question to be

considered anticompetitive. *Id.* at 71. On the other hand, the Court also made it clear that a justification Microsoft proffered for much of its behavior—namely, keeping independent software vendors focused on the APIs exposed by Windows, rather than rival APIs—was not a procompetitive business justification. *Id.* at 72.

The result of this analysis was a determination by the Court of Appeals that each of the acts deemed anticompetitive had a significant anticompetitive effect. For example, the Court found that Microsoft's boot sequence restrictions on OEMs "has a substantial effect in protecting Microsoft's market power, and does so through means other than competition on the merits." *Microsoft*, 253 F.3d at 62. It found that the IAP agreements "clearly have a significant effect in preserving its monopoly." *Id.* at 71. It found that the ISV First Wave Agreements "had a substantial effect in further foreclosing rival browsers from the market" and "have a substantial effect in preserving Microsoft's monopoly." *Id.* at 72. It found that Microsoft's exclusive agreement with Apple "has a substantial effect upon the distribution of rival browsers." *Id.* at 73. And it found that Microsoft's actions directed against Java "seriously impeded [the] distribution of Sun's JVM" and therefore "seriously reduced the distribution of Navigator." *Id.* at 75-76.

The Court of Appeals was clear as to these significant anticompetitive effects, notwithstanding that "neither plaintiffs nor the court can confidently reconstruct a product's hypothetical technological development in a world absent the defendant's exclusionary conduct." *Id.* at 78. The Court also recognized that the District Court had not concluded that, but for Microsoft's anticompetitive actions, Microsoft's operating system monopoly would already have been eliminated. *Id.* But that degree of uncertainty was and is hardly surprising, since middleware is at best a means of facilitating the entry of actual operating system competition for

Microsoft.

2. Evidence in These Proceedings Likewise Supports the Conclusion That Microsoft's Actions Maintained and Enhanced the Barrier to Entry

Evidence in the remedy proceedings likewise supported the conclusion that Microsoft's unlawful monopoly maintenance affected the barrier to entry. The purpose and effect of Microsoft's actions was to adversely affect the development path of two significant platform threats. *See,* e.g.*,* Shapiro ¶¶ 72-74; DX 1487 at 4 (Mr. Gates' "Internet Tidal Wave" memo; describing Netscape as "pursuing a multiplatform strategy where they moved the key API into the client to commoditize the underlying operating system"). There cannot be any real question that these were significant platform threats. Indeed, although Mr. Gates had stated in his written testimony that "Navigator and Java *supposedly* had the potential to become general-purpose software development platforms," Gates Direct Testimony (DX 1507) ("Gates Dir.") ¶ 143 (emphasis added), he acknowledged on cross-examination that Navigator and Java had such potential in 1995, Tr. 4736:20-4737:4 (Gates), and that he would be "glad to strike the word supposedly" from his written testimony, Tr. 4740:7-17 (Gates), thereby conceding that Navigator and Java had the potential to become general-purpose software development platforms.

Based upon the findings of the courts in these earlier proceedings, the contemporaneous views of Microsoft executives, and the current state of these technologies, it is clear that Microsoft's actions to thwart Navigator and Java maintained and enhanced the applications barrier to entry. *See*, e.g., Shapiro Dir. ¶ 22 ("[T]he applications barrier to entry has been *strengthened* by Microsoft's illegal conduct, most obviously by Microsoft's gaining control over one of the most important applications in the era of the Internet, the browser." (emphasis in original)), ¶¶ 58-83.

Both Navigator and Java had built up some significant momentum, and would have been in a position to take advantage of the positive feedback loop that often benefits software, but for Microsoft's anticompetitive actions. Shapiro Dir. ¶ 82; *see also* Tr. 1103:5-1105:12 (Tiemann). Moreover, the technologies involved—a browser and a runtime environment particularly suited to Internet applications—have if anything become even more important in the years since Microsoft's anticompetitive actions aimed at limiting their growth. Shapiro Dir. ¶ 83.

Microsoft's browser, Internet Explorer, in part as a result of Microsoft's anticompetitive actions, is today by far the most widely used browser. Microsoft was also able, in significant part through its anticompetitive actions, to limit the spread and usage of Java on the desktop, notwithstanding Java's success in other areas. Microsoft has recently released a runtime environment as part of its .NET initiative, the Common Language Runtime ("CLR"), which in many ways is intended to compete with Java. Shapiro Dir. ¶ 83.

By its campaign of anticompetitive actions aimed at Netscape and Java, Microsoft helped retard the development of technologies that had the potential to facilitate entry into the market for Intel-compatible PC operating systems. Thus, Microsoft's anticompetitive actions increased or augmented the applications barrier to entry that would otherwise have protected Microsoft's desktop operating system monopoly. Shapiro Dir. ¶¶ 7, 22-24 ("In summary, Microsoft's illegal conduct 'has retarded and perhaps altogether extinguished' the development of a pair of threatening technologies—Netscape's Navigator and Sun's Java—that were in the process of lowering the barriers to entry into the market monopolized by Microsoft Windows. In the language of economics, Microsoft's illegal conduct *raised the entry barriers protecting the Windows desktop monopoly."* (emphasis in original)).

3. Microsoft's Unsupported Claim of No Significant Effect

Microsoft has claimed through a number of witnesses, particularly through one of its economic experts, Dr. Kevin Murphy, that its anticompetitive conduct had no significant effect on Navigator, Java or on Microsoft's monopoly position in the market for Intel-compatible PC operating systems. Dr. Murphy's analysis, however, contradicts a variety of findings by the Court of Appeals, ignores many facts in the record, and utilizes methods that were previously rejected during the liability phase of these proceedings. Moreover, Microsoft's other economic expert, Dr. Kenneth Elzinga, testified that Microsoft's conduct had the effect of augmenting the barrier to entry that might have otherwise existed. Tr. 6680:14-18 (Elzinga).

In his analysis, Dr. Murphy ignored, for example, the determinations by the Court of Appeals that Microsoft's anticompetitive conduct had significant anticompetitive effects and "caused" Netscape and Java to lose share on the PC desktop. *See,* e.g*., Microsoft*, 253 F.3d at 62 (Microsoft's boot sequence restrictions on OEMs "has a substantial effect in protecting Microsoft's market power, and does so through a means other than competition on the merits"); *id.* at 71 (IAP agreements "clearly had a significant effect in further preserving its monopoly"), *id.* at 72 (ISV First Wave Agreements "have a substantial effect in foreclosing rival browsers from the market"); *id.* at 75-76 (Microsoft's actions directed against Java "seriously impeded [the] distribution of Sun's JVM" and therefore "seriously reduced the distribution of Navigator").

Dr. Murphy's analysis directly contradicts those findings of the Court of Appeals. In his direct testimony, Dr. Murphy opined that the boot sequence restriction (Murphy Direct Testimony (DX 1529) ("Murphy Dir.") ¶ 57), IAP agreements (*id*. ¶¶ 47, 53), ISV First Wave agreements (*id*. ¶ 91), and the Apple agreement (*id*. ¶ 84) had only a small effect at best on Navigator's share. He also wrote that Microsoft's acts against Java had a limited effect on Java,

and therefore on Navigator's share as well. (*id*. ¶ 94). When presented with these inconsistencies during cross-examination, Dr. Murphy insisted that his statements were completely consistent with the Court of Appeals' opinion. Tr. 3874:14-3890:14 (Murphy). That does little to substantiate his analysis. Indeed, part of his rationale appeared to be that, in his own reading as an economist, the Court of Appeals was using a different standard in discussing causation for liability purposes as opposed to for remedy purposes. Moreover, Dr. Murphy conceded that his methodology departed from that accepted by the District Court in several of its findings. Tr. 3986:2-20 (Murphy).

On the other hand, Dr. Shapiro presented evidence, based not only upon the findings of fact and various determinations by the Court of Appeals, but also based upon (a) the contemporaneous views and analyses of Microsoft executives of the significance of the platform threat posed by Navigator and Java, and (b) subsequent market developments, including the obvious import of browsers and run-time environments such as Java, that underscored the significance of the effects of Microsoft's actions. Shapiro Dir. ¶¶ 58-83.

For all these reasons, Microsoft has provided no basis for its assertion that its anticompetitive conduct had no significant impact upon the development of Navigator or Java, or upon the middleware threat generally, the applications barrier to entry or on competition generally.

III. The Appropriate Scope and Objectives of the Remedy Here

A. The Court of Appeals Directed that the Remedy Here Meet Four Well-Recognized Objectives for Conduct Remedies in Monopolization Cases

Drawing upon ample Supreme Court precedent, the Court of Appeals set forth the legal standard for this Court's remedy determination: "a remedies decree in an antitrust case must seek to 'unfetter a market from anticompetitive conduct,' to 'terminate the illegal

monopoly, deny to the defendant the fruits of its statutory violation, and ensure that there remain no practices likely to result in monopolization in the future.'" *Microsoft*, 253 F.3d at 103 (quoting *Ford Motor Co. v. United States*, 405 U.S. 562, 577 (1972), and *United States v. United Shoe Mach. Corp.*, 391 U.S. 244, 250 (1968)) (citation omitted).

Indeed, the Court placed such import on these objectives that it remanded the remedy in part because the District Court has "not explained how its remedies decree would accomplish those objectives." *Id.* "Nowhere did the District Court discuss the objectives the Supreme Court deems relevant." *Id.*

B. The Appropriate Remedy Here Should Reduce the Applications Barrier to Entry to the Level It Would Have Been Absent Microsoft's Anticompetitive Conduct

Because of the length of time Microsoft employed these exclusionary practices, Microsoft's success in using these unlawful means to maintain and enhance the applications barrier to entry above and beyond what it would have otherwise been, and the changes in the marketplace in the intervening years, the remedial objectives outlined by the Court of Appeals cannot be achieved here merely by ordering Microsoft to halt the specific exclusionary practices it directed at Navigator and Java.

As explained above, the applications barrier to entry is critical to the maintenance of Microsoft's PC operating system monopoly. Because Microsoft's anticompetitive conduct here maintained and enhanced the applications barrier to entry that protects its monopoly, Shapiro Dir. ¶¶ 7, 11-24, a remedy that meets the Court of Appeals' objectives must reduce that barrier to the level it would have been absent Microsoft's unlawful behavior. The Court of Appeals has described one of the challenges in crafting a remedy as "*restoring* competition to a dramatically changed, and constantly changing, marketplace." *Microsoft*, 253 F.3d at 49. An appropriate remedy here should be designed not only to stop Microsoft's past anticompetitive

conduct and to prevent any recurrence in the future, but also to take additional, direct steps to reduce the applications barrier to entry to what it would have been absent Microsoft's unlawful conduct. *See* Shapiro Dir. ¶¶ 25-26, 45-47, 58.

It is difficult, as the Court of Appeals has already explained, *Microsoft*, 253 F.3d at 79, to determine with any great precision just how competition from the existing rivals or new entrants would have played out over the past five or six years, had Microsoft not illegally impeded the middleware threats posed by Navigator and Java. Shapiro Dir. ¶¶ 38, 58. Specifically, it is impossible for the Court to determine with confidence precisely: (a) what cross-platform applications would have developed over the past five or six years with a thriving Navigator or Java; (b) the degree of growth that would have been sustained by rival operating systems had such systems supported the dominant web browser (*i.e.,* Navigator) for the past five or six years, while Microsoft attempted to compete with a browser that commanded a smaller share of the market; (c) the degree of growth that would have been sustained by such competitive operating systems also having access during the past five or six years to whatever new cross-platform applications would have been written to Navigator or Java in the interim period; or (d) the degree to which any or all of these effects might have enabled a competing operating system to benefit from a "positive feedback loop" or network effects. *See* Tr. 1099:11-1105:12, 1116:2-1118:1 (Tiemann).

Yet, as the Court of Appeals further explained, it is not the plaintiffs who must suffer the consequences of the inability of the Court to conclude precisely the effect of Microsoft's conduct: "[T]he underlying proof problem is the same—neither plaintiffs nor the court can confidently reconstruct a product's hypothetical technological development in a world

absent the defendant's exclusionary conduct. To some degree, 'the defendant is made to suffer the uncertain consequences of its illegal conduct.'" *Microsoft*, 253 F.3d at 79 (citations omitted).

Considering these factors, and events that have occurred in the marketplace, it is not possible for the remedy to restore the potential for competition that existed prior to Microsoft's monopoly maintenance merely by stopping the unlawful conduct and protecting nascent middleware threats today and in the future. The combined threat posed in the mid-1990s by the combination of Navigator and Java, at the time when the Internet was just becoming of critical importance, exceeds the potential threat posed by any middleware or even any combination of middleware evident today. Shapiro Dir. ¶ 33 ("Despite an extensive investigation, I have been unable to identify any middleware threat today that is nearly as powerful as the combined threat to Windows posed by Navigator and Java six years ago.") As Dr. Shapiro concludes, "For just this reason, I doubt that any remedy today directed only at middleware could restore competition, *i.e.* create conditions giving rise to a threat as powerful as Microsoft faced six years ago." *Id.*

The import of these circumstances is that "the remedy must affirmatively facilitate competition not only by cross-platform middleware but by other routes as well," Shapiro Dir. ¶ 34, including competing operating systems. The ability of rival operating systems to present even the potential for competition and to overcome the applications barrier that was maintained and enhanced by Microsoft's anticompetitive conduct depends in large measure on the ability of those rival systems to offer end-users access to a critical mass of applications. Making key applications available now to rival operating systems can therefore lower the applications barrier in a manner that, while not providing the rival systems with a particular

market share or foothold, fosters the goal of restoring the potential for competition that existed prior to Microsoft's anticompetitive campaign to thwart Navigator and Java.

"Unfettering the market" here, in short, requires measures that will eliminate the change in the applications barrier to entry brought about by Microsoft's anticompetitive conduct. To that extent, this case resembles *Ford Motor Co.* In *Ford Motor Co.*, the court entered both a divestiture order and various conduct measures to remedy an unlawful acquisition. The conduct remedies, which included both affirmative and prohibited conduct wholly unrelated to the unlawful acquisition, were affirmed by the Supreme Court because they were deemed necessary to address the unlawful conduct at issue, as well as assure the public that it would not occur in the future. *Id.* at 573 n.8.

The Supreme Court's discussion in *Ford Motor Co.*, which was referenced by the Court of Appeals, provides some key insights:

> Antitrust relief should unfetter a market from anticompetitive conduct and "pry open to competition a market that has been closed by defendants' illegal restraints." The temporary elimination of Ford as a manufacturer of spark plugs lowers a major barrier to entry in this industry. Forces now at work in the marketplace may bring about a deconcentrated market structure and may weaken the onerous OE tie.

405 U.S. at 577-78 (citations omitted). In other words, "unfetter[ing] a market" and "pry[ing]open to competition" involves eliminating the ongoing effects of a restraint of trade and may, in the appropriate circumstances such as those found here, include actions to affirmatively lower barriers to entry into a monopolized market.

Similarly, in *United States v. United States Gypsum Co.*, 340 U.S. 76 (1950), the Court explained its task on remedy as follows:

> A trial court upon a finding of a conspiracy in restraint of trade and a monopoly has the duty to compel action by the conspirators that will, so far as practicable, cure the ill effects of the illegal conduct, and assure the public freedom from its continuance. Such action is not limited to prohibition of the proven means by which the evil was

> accomplished, but may range broadly through practices connected with acts actually found to be illegal. Acts entirely proper when viewed alone may be prohibited. The conspirators should, so far as practicable, be denied future benefits from their forbidden conduct.

Id. at 88-89 (footnotes omitted).

The mission on remedy, in short, must include some measures to reduce the applications barrier to entry to approximately that level that it would have been but for Microsoft's unlawful monopolization.

C. The Remedy Must Properly Take Account of Changes in the Marketplace by Reaching Current Platform Threats to Microsoft's PC Operating System Monopoly

1. Legal Foundation for Reaching Newer Technologies

In explaining the process by which a remedy must be crafted, the Court of Appeals emphasized the importance of a hearing to "update and flesh out the available information" before imposing substantial relief. *Microsoft*, 253 F.3d at 49. That is of course consistent with the view, also endorsed by the Court, *id*., and by the commentators, that conduct remedies must look forward, not just backward:

> The principal purpose of equitable relief is not to punish violators but to restore competitive conditions—the "undoing" of what the antitrust violation achieved. In contrast to the trial itself, which looks into a past period defined by the complaint for evidence of violations, the inquiry as to the appropriate remedy necessarily looks forward. This may require the court to examine evidence that was not placed into the record at trial or did not even exist until after judgment on the merits.

2 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 325c (2d ed. 2000) (footnote omitted). There would be no reason to look forward, of course, if all that were involved were restrictions on repeating prior wrongdoing.

Meeting the Court of Appeals' remedy objectives requires consideration of the extent to which technological change since the time of the liability proceedings impacts the

formulation of the appropriate remedial provisions. Numerous cases hold that an antitrust remedy should be more than "a simple proscription against the precise [unlawful] conduct previously pursued," *see,* e.g., *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 698 (1978), because "a mere prohibition of the precise scheme would be ineffectual to prevent restraints." *United States v. Bausch & Lomb Optical Co*., 321 U.S. 707, 727 (1944).

One of the critical insights that emerges from these cases is the "same or similar" conduct analysis that derives principally from *Zenith Radio Corp. v. Hazeltine Research, Inc.,* 395 U.S. 100 (1969). In *Zenith,* the Supreme Court considered antitrust claims relating to various unlawful patent pools, including patent pools in Canada, England, and Australia. The trial court found liability relating to all of the patent pools, and entered "injunctive relief against further participation in any arrangement to prevent Zenith from exporting electronic equipment into any foreign market." *Id.* at 107. The Court of Appeals reversed, including striking the injunctive relief relating to trade in foreign markets.

Although the Supreme Court agreed that there was not sufficient evidence to support a claim for money damages relating to the Australian and English markets, the Court reversed and reinstated the injunction that barred agreements restraining entry *into any foreign market, including Australia and England*. In so holding, the *Zenith* Court made clear that a decree may reach conduct of the 'same type or class as unlawful acts which the court has found to have been committed or whose commission in the future, unless enjoined, may fairly be anticipated from the defendant's conduct in the past.' *Id.* at 132 (quoting *NLRB v. Express Publ'g Co.*, 312 U.S. 426, 435 (1941)).

The "same or similar" analysis is critical to determining the appropriate scope of the remedy here. This case has never been just about Netscape and Java. The District Court's

Findings of Fact are clear that there were other middleware threats even as of April 1999:

> Although they have been the most prominent, Netscape's Navigator and Sun's Java implementation are not the only manifestations of middleware that Microsoft has perceived as having the potential to weaken the applications barrier to entry. Starting in 1994, Microsoft exhibited considerable concern over the software product Notes, distributed first by Lotus and then by IBM. Microsoft worried about Notes for several reasons: It presented a graphical interface that was common across multiple operating systems; it also exposed a set of APIs to developers; and, like Navigator, it served as a distribution vehicle for Sun's Java runtime environment. Then in 1995, Microsoft reacted with alarm to Intel's Native Signal Processing software, which interacted with the microprocessor independently of the operating system and exposed APIs directly to developers of multimedia content. Finally, in 1997 Microsoft noted the dangers of Apple's and RealNetworks' multimedia playback technologies, which ran on several platforms (including the Mac OS and Windows) and similarly exposed APIs to content developers. Microsoft feared all of these technologies because they facilitated the development of user-oriented software that would be indifferent to the identity of the underlying operating system.

84 F. Supp. 2d at 30, Finding of Fact No. 78.

The parties have presented sharply contrasting views about how the "same or similar" construct from *Zenith* should be applied in this case. Both seem to agree, for example, that the remedy should reach "middleware," but their proposed definitions are vastly different. There would surely be no point in limiting the remedies merely to the two technologies that were subject to the unlawful behavior, when the same conduct can be and has been directed at others. The scope of remedy issue is, in part, an issue about the breadth of the middleware definition.

The States have proposed a remedy that reaches a variety of newer platform threats, including server operating systems, Web services, handheld devices and set-top boxes, which may or may not constitute middleware. No single middleware threat today may facilitate competitive entry into the monopolized market as rapidly as the combined threat of Navigator and Java in the middle 1990s, Shapiro Dir. ¶¶ 31-33. Moreover, the States have established that various technologies currently being marketed do have the potential to erode Microsoft's Windows monopoly by attracting significant interest from independent software developers, and

of serving to generate cross-platform applications that will reduce the applications barrier to entry.

2. Networks and Server-Based Applications

Traditionally, the majority of software applications were located on a client PC—a user's personal desktop. Ledbetter Direct Testimony (PX 1684 ("Ledbetter Dir.") ¶ 17. Today, many popular software applications—particularly those used in enterprise environments by businesses, government or other organizations—have begun to migrate from the desktop and now reside on servers in a computer network. Ledbetter Dir. ¶¶ 17-20; Tiemann Direct Testimony (PX 1603) ("Tiemann Dir.") ¶ 127.

Increasingly, personal computers (PCs) are linked together electronically through networks. Ledbetter Dir. ¶ 16; Tiemann Dir. ¶ 127. Computers called "servers," and software that resides on those servers, manage these networks, and support many, if not all, of the applications available to those whose personal computers are connected to the network. Ledbetter Dir. ¶¶ 16-17, 21; Tiemann Dir. ¶ 127. In this environment, the PCs attached to the network are referred to as "clients," and the client PC is the means by which a user accesses the functions and applications the network makes available. Ledbetter Dir. ¶¶ 16, 21.

In this setting, server operating systems function as middleware. Ledbetter Dir. ¶¶ 47-50. As the "migration" of software applications from desktop PCs to servers occurs, software developers have increasingly begun to write applications that call on the APIs exposed by server operating systems. Ledbetter Dir. ¶ 47; Tiemann Dir. ¶ 131. In other words, server operating systems, similar to middleware such as Netscape and Java, provide a platform for applications development and a means for end-users to access applications without regard to which PC operating system they use. Ledbetter Dir. ¶¶ 48-50; Tiemann Dir. ¶ 131.

Server operating systems are typically cross-platform in terms of their ability to interoperate to at least some degree with a variety of client PC operating systems. Ledbetter Dir. ¶ 49; Tiemann Dir. ¶ 130. Therefore, applications that are written to call upon the APIs exposed by a server operating system, rather than the APIs of a desktop PC operating system, can be utilized by PCs running a number of competing operating systems. Ledbetter ¶ 50; *see also* Tiemann ¶ 131.

3. Web Services

Web services involve applications that traditionally resided on the PC, moving to Web servers and being accessed by PCs and other devices across the Internet. Borthwick Dir. ¶ 72; Gates Dir. ¶¶ 39-40. Examples of Web services range from applications that have been historically installed on PCs (such as word processing, calendaring or e-mail programs) to other applications such as online banking, airline or theatre reservations, downloaded music or movies on demand, or a virtual mailbox that handles all of a consumer's messages. Schwartz Direct Testimony (PX 1831) ("Schwartz Dir.") ¶ 31.

Because these applications reside on the Internet rather than on the PC, users can access them from a number of different devices. Borthwick Direct Testimony (PX 1764) ("Borthwick Dir.") ¶ 73; Gates Dir. ¶¶ 39, 45. To access these devices, a user will simply need Internet access, be it through a desktop PC, cell phone, handheld device or other piece of connected hardware. Borthwick Dir. ¶ 73; Schwartz Dir. ¶ 30; Gates Dir. ¶ 39. By facilitating and improving on the ability of applications running on different devices to communicate and interoperate with one another, the evolving Web services paradigm offers the potential for powerful, distributed computing to occur across an unlimited variety of devices and operating systems. Schwartz Dir. ¶ 34; Gates Dir. ¶¶ 39-40; Allchin Direct Testimony (DX 1501) ("Allchin Dir.") ¶ 52.

The Web services platform is considered by many in the software industry to be the next important area of software development. Schwartz Dir. ¶¶ 28-35; *see also* Gates Dir. ¶ 12 (Web services are the "next generation computing platform"); Allchin Dir. ¶ 50. To take advantage of this phenomenon, Microsoft has created its new .NET initiative, which it describes as an emerging platform for Web services. Allchin Dir. ¶¶ 43, 62; Schwartz Dir. ¶ 73; PX 123; PX 133. To emphasize the importance of .NET, Microsoft is devoting such a large share of its resources to Web services development—through the development of its .NET Initiative—as to consider it a "bet the company" initiative. Tr. 4562:9-16 (Gates); *see also* Gates Dir. ¶ 46 ("Realization of our .NET vision will take many years and many billions of dollars of R&D investment by Microsoft and partners who share our vision.")

The move to Web services is such an important change in the way computing will evolve that Microsoft has described it as analogous to the introduction of Windows. Bill Gates put it in these terms: "[I]n the same way that Windows was our product for graphics interface, .NET is our platform for this new era." Schwartz Dir. ¶ 73; PX 133. In an earlier speech, he emphasized that "[w]hat we're talking about today is far more ambitious than [making the Internet accessible]. *This is a new platform. This will affect every piece of application code that gets written*." PX 123 (emphasis added); Schwartz Dir. ¶ 73.

Web services can, if unimpeded, pose an important platform threat to the Windows PC operating system monopoly. Schwartz Dir. ¶ 36. As such applications are delivered as Web services that reside and run on servers that can be accessed by a variety of client devices, provided that the developers of Web services adopt industry standard protocols, users will not be forced to use Microsoft's desktop operating system to run the applications they

desire. Schwartz Dir. ¶ 37; Borthwick Dir. ¶ 74; *see also* Gates Dir. ¶¶ 40, 45; Allchin Dir. ¶¶ 44, 62.

4. Set-top Boxes

A set-top box is a computer attached to a television. Tr. 2204:12-2206:13 (Kertzman). Through the use of interactive television middleware, set-top boxes can provide both enhanced television—including "video-on-demand," an on-screen television guide, and the ability to interact with particular television programs—as well as traditional personal computer functionality such as e-mail, Internet access, instant messaging, and the provision of streaming audio and media. Kertzman Direct Testimony (PX 1703) ("Kertzman Dir.") ¶ 3; Tr. 2204:12-2206:13 (Kertzman).

Currently, interactive television middleware is used as middleware on an embedded operating system in a set-top box. In this form, it is distributed through network operators—cable or satellite television companies. Interactive television middleware can also be deployed directly on a PC as PC middleware. Kertzman Dir. ¶ 36. As the set-top box develops more and more PC functionality, it and the PC have been "converging" into a unitary device. *Id.* Sony and Philips already sell a PC-based device to time-shift television. A start-up company called Moxi is developing a more powerful PC-based product to time-shift television and act as a home-audio and media hub. *Id.* Microsoft's Xbox game console is also a Windows-based PC device connected to both the Internet and televisions. Kertzman Dir. ¶ 39. Microsoft has announced its plan—centered around the "eHome initiative," "Mira" device, and "Freestyle" software—to transition the Windows PC into a full media hub in the home that will synchronize and control PDAs, laptop computers, mobile devices, and televisions. As part of this plan, Microsoft will carry interactive television middleware as middleware on the desktop PC, which can then be used to control the television and eliminate the need for a set-top box. Kertzman Dir.

¶¶ 38, 40; Tr. 2210:20-2211:3 (Kertzman); PX 1727, PX 1728, PX 1729, PX 1730, PX 1731, PX 1732, PX 1733, PX 1737. Microsoft has already bundled some television functionality into Windows XP and intends to fully implement television functionality later this year. Kertzman Dir. ¶ 41; PX 1735. When interactive television technology is transferred into the desktop PC, interactive television middleware vendors will be forced into this second mode of deployment, supplying middleware for the desktop PC operating system. Tr. 2211:3-2213:11(Kertzman); PX 1762.

Regardless of the form or means of distribution, interactive television middleware—such as that supplied by Liberate technologies—is "platform agnostic." In the set-top box, it runs on any of the 13 operating system platforms found on today's set-top boxes, including Windows CE and Linux; as middleware on the PC, it will run on comparable diverse PC operating systems. Tr. 2201:19-2203:5, 2213:24-2215:12 (Kertzman). Because that middleware is based on Java, applications written to it are also based on Java and can be used on any Java-enabled device, including non-Windows PC operating systems. Tr. 2206:14-2207:12 (Kertzman). Even if it only ran on set-top boxes on televisions, with 1.4 billion televisions in the world—a number that dwarfs the number of existing PCs—the market for interactive television middleware is much larger than the current market for PC applications. Tr. 2109:11-2110:6 (Kertzman). Because it offers a larger market than currently exists for Windows-only applications, interactive television can potentially draw developers to create these cross-platform Java applications regardless of how many Windows applications exist. Tr. 2207:13-2208:21 (Kertzman). By fostering the growth of cross-platform Java applications, which will work on non-Windows PC operating systems, set-top boxes and interactive television middleware thus serve to reduce the applications barrier to entry.

In summary, whether deployed as middleware on a desktop PC or as middleware on an embedded operating system on a television, set-top boxes and the interactive television software that they host are platform threats to Windows. Kertzman Dir. ¶ 33. As middleware on the PC, interactive television software presents a threat to Windows that is the same or very similar to the platform threat presented by Netscape Navigator in the mid-1990s. Kertzman Dir. ¶ 34; Tr. 2109:9-2110:8 (Kertzman). Like the Navigator browser, in this form, interactive television middleware is middleware on the PC exposing APIs with the capability of attracting massive numbers of new applications.

5. Handheld Devices

Handheld devices are another increasingly important platform threat to the Windows desktop monopoly. Handhelds are a flexible category of devices including Palm OS powered handheld computers, Microsoft's Pocket PC, and handheld computers based on other operating systems such as Linux. Mace Direct Testimony (PX 1648) ("Mace Dir.") ¶¶ 19-20. They can perform a variety of functions, such as calendaring, email, spreadsheets, and word processing, and allow users to perform computing tasks when away from their PC. Mace Dir. ¶¶ 12-14. They also include high-functioning mobile phones called "smart phones" that are powered by various operating systems, including the Palm OS, Microsoft's "Smartphone" software, or the Symbian operating system backed by Nokia. Mace Dir. ¶¶ 21-22. All of these handheld devices run on an operating system platform, much like desktop PCs. Shapiro Dir. ¶ 188. Accordingly, they expose APIs that applications written to a handheld operating system can invoke. *Id.* Handhelds are rapidly increasing in popularity. Mace Dir. ¶ 12.

Handheld devices running non-Microsoft operating system software pose a platform threat to the Windows operating system for four independent reasons. First, handheld devices are today a substitute to the PC for many consumers. This direct competition for

consumers is growing every day, as advances in handheld device memory, speed, and functionality, as well as advances in screen and wireless technologies allow more and more computer users to accomplish computing tasks on a handheld device that once were performed solely on a PC. Mace Dir. ¶ 13; Shapiro Dir. ¶ 187.

Second, as handheld technology evolves, and the demand for handheld devices continues to increase, so do the breadth of APIs exposed by handheld operating systems to developers. This in turn attracts more developers to write applications for handheld devices, making handheld devices even more directly competitive with Windows PCs. Mace Dir. ¶¶ 15-17. As handheld operating systems continue to evolve into a substitute to the PC operating system, this increases the likelihood (by increasing the potential profitability and lowering the costs) that a handheld device operating system developer would port it to run on Intel-compatible PCs. Alternatively, a handheld operating system developer could design the operating system in conjunction with a layer of cross-platform middleware to run on top of Windows operating systems, thereby reducing the applications barrier to entry with respect to PC operating systems.

Third, handheld device operating systems present supply-side competition to Windows with respect to the most important source of the applications barrier to entry—software developers. As handheld operating systems have gained, and continue to gain, in popularity, they attract thousands of software developers. To the extent that applications are written to the APIs exposed by a handheld operating system instead of Windows APIs, it reduces the number of applications written for Windows, thereby reducing the applications barrier to entry facing a developer of a non-Microsoft PC operating system.

Fourth, handheld devices today support, and in the future will be even more important channels of distribution for, cross-platform middleware that potentially could erode the

applications barrier to entry in the PC operating system market. Green Direct Testimony (PX 1512) ("Green Dir.") ¶ 123 (handheld devices support and carry Java); Richards Direct Testimony (PX 1598) ("Richards Dir.") ¶ 32 (RealNetworks' multimedia technology is supported on numerous handheld devices, including PDAs and cell phones); Mace Dir. ¶ 16 (handheld devices will play important role in the advent of Internet-based and Web services); Pearson Direct Testimony (PX 1763) ("Pearson Dir.") ¶ 8 (handheld devices will be a major access point for Web services). By providing greater distribution for cross-platform middleware, handheld devices create a larger market for and greater consumer demand for cross-platform middleware. This in turn creates greater financial incentives for ISVs to write applications to this middleware, instead of directly to the APIs exposed by Windows, thereby increasing the likelihood that cross-platform middleware will reach a point of distribution that can erode the applications barrier to entry.

Because Microsoft owns the dominant desktop operating system, Microsoft has the power to hinder a handheld platform's interoperability. Mace Dir. ¶ 32. As Microsoft has recently engaged in activity to place competing handhelds at a disadvantage to its Pocket PC, Mace Dir. ¶ 35, it is not farfetched to believe that Microsoft would take action to harm the interoperability of rival handheld operating systems.

6. Other Forms of Middleware

Although Navigator and Java, were, for a variety of reasons, unusually strong threats to Microsoft's desktop operating system monopoly, other potential middleware platform threats were mentioned during the liability proceedings, including Apple's and RealNetworks' media playback technologies. 84 F. Supp. 2d at 30, 36-38, Findings Nos. 78, 104, 111-14.

The District Court recognized that Microsoft viewed multimedia technologies as a potential platform threat, or at least part of such a threat. The District Court found that

"Microsoft noted the dangers of Apple's and RealNetworks' multimedia playback technologies, which ran on several platforms (including the Mac OS and Windows) and similarly exposed APIs to content developers. Microsoft feared all of these technologies because they facilitated the development of user-oriented software that would be indifferent to the identity of the underlying operating system." 84 F. Supp. 2d at 30, Finding No. 78.

With respect to Apple's multimedia technologies, the Court found that "[b]ecause QuickTime is cross-platform middleware, Microsoft perceives it as a potential threat to the applications barrier to entry." 84 F. Supp. 2d at 36, Finding No. 104. And focusing specifically on RealNetworks, the District Court found that Microsoft's senior executives "viewed RealNetworks' streaming software with the same apprehension with which they viewed Apple's playback software—as competitive technology that could develop into part of a middleware layer that could, in turn, become broad and widespread enough to weaken the applications barrier to entry." *Id.* at 37-38, Finding No. 111.

Media playback and delivery software has, in fact, become an increasingly significant form of middleware in the years since the liability proceeding. *See,* e.g., Richards Dir. ¶ 63.

It is not possible to predict precisely what middleware will become a platform threat in the future. With the growth of computer networks and the Internet, middleware that resides on a personal computer and provides services to end-users through applications entirely resident on that same computer has become less important in the period of time since the liability proceedings. Increasingly the types of middleware that are most relevant are those that (a) are not even resident on a personal computer, or (b) reside on the personal computer, but are

intended to enable or facilitate interaction with programs or data resident on another computer or even another type of device.

7. Monopoly Maintenance Remedy Must Protect Technologies Outside the Relevant Market

Although Microsoft has at times argued that the scope of the remedy cannot reach beyond the outer bounds of the monopolized market, the Court of Appeals has already squarely rejected that argument. Microsoft argued on appeal that it was "contradictory" to exclude from the relevant market "the very competitive threats [i.e. Java and Navigator] that gave rise" to the action. *Microsoft*, 253 F.3d at 54 (quoting Appellant's Opening Br. at 84). The Court of Appeals had no trouble disposing of that argument:

> The purported contradiction lies between plaintiffs' § 2 theory, under which Microsoft preserved its monopoly against middleware technologies that threatened to become viable substitutes for Windows, and its theory of the relevant market, under which middleware is not presently a viable substitute for Windows. Because middleware's threat is only nascent, however, no contradiction exists. Nothing in § 2 of the Sherman Act limits its prohibition to actions taken against threats that are already well-developed enough to serve as present substitutes. Because market definition is meant to identify products "reasonably interchangeable by consumers," and because middleware is not now interchangeable with Windows, the District Court had good reason for excluding middleware from the relevant market.

253 F. 3d at 54 (citations omitted).

As the Court of Appeals recognized, a technology or type of software is in the relevant market only if, at present or in the near future, it is considered by consumers as "reasonably interchangeable" with the product at issue (in this case, PC operating systems) – in other words, it is a close enough substitute that significant numbers of consumers will switch to buying the other product if the firm controlling PC operating systems tries to raise prices:

> The test of reasonable interchangeability, however, only required the District Court to consider substitutes that constrain pricing in the reasonably foreseeable future, and only products that can enter the market in a relatively short time can perform that function. Whatever middleware's ultimate potential, the District Court found that consumers could not now abandon their operating systems and switch to middleware in response to a

> sustained price for Windows above the competitive level. Nor is middleware likely to overtake the operating system as the primary platform for software development any time in the near future.

253 F.3d at 53-54 (citations omitted).

Thus, the Court of Appeals expressly embraced the view that the nascent threats under attack by Microsoft need not be – indeed, would not necessarily be expected to be – sufficiently close substitutes to PC operating systems to *already be* within the same relevant product market. There was no inconsistency because the two technologies that were the prime targets of Microsoft's exclusionary conduct, Netscape's Navigator and Sun's Java, were both middleware and not as of the time of the liability proceedings within the boundaries of the monopolized market.

The key question, then, is not, as Microsoft argues, whether the technology at issue is *already in the same relevant market,* since that would ignore the fact that Navigator and Java were recognized to not to be in the market for PC operating systems. Rather, the relevant inquiry for remedy purposes is whether the technology at issue, whether it is a server operating system, a run-time environment that supports Web-services, a handheld device, or a set-top box, is being subjected to the same or similar conduct in order to *maintain the same monopoly* – that is, the monopoly over PC desktop operating systems—as was at issue in the liability proceedings.

D. The Remedy Must Cover Conduct that Is "Same or Similar" to Proven Anticompetitive Acts or that Represents Another Means to Attain the Same Unlawful End of Suppressing Nascent Platform Threats

The scope of remedy necessarily entails not only determining the technologies that warrant coverage, whether as middleware or otherwise, but also the scope of remedial provisions themselves. The case law again underscores the breadth of approach necessary to "unfetter" markets from monopolistic practices and to prevent their recurrence in the future.

In *International Salt Co. v. United States*, 332 U.S. 392 (1947), for example, the Supreme Court addressed an antitrust defendant's challenge to a decree that proscribed conduct unrelated to that which formed the basis for liability. The defendant was found liable for violating the antitrust laws by leasing salt utilization machines on the condition that all leasees also purchase all salt products consumed by the leased machines from the defendant. *Id.* at 394. After this liability finding, the defendant proposed a decree that enjoined it from refusing to lease or sell any machine on the grounds that a leasee had used or planned to use salt not manufactured by defendant. *Id.* at 399 n.8. By contrast, the government sought a decree that, among other things, directed the defendant to lease or sell the salt utilization machines generally to any applicant on non-discriminatory terms and conditions, *notwithstanding the fact that there was no proof, or even an allegation, that the defendant had used discriminatory terms to coerce the purchase of salt in connection with the salt machine leases.* *Id.* at 398 n. 7.

The Court conceded that "it is true that the record discloses no threat to discriminate after the judgment of the court is pronounced," but nonetheless rejected the defendant's contention "that the injunction should go no farther than the violation or threat of violation":

> We cannot agree that the consequences of proved violations are so limited. The fact is established that the appellant already has wedged itself into this salt market by methods forbidden by law. The District Court is not obliged to assume, contrary to common experience, that a violator of the antitrust laws will relinquish the fruits of the violation more completely than the court requires him to do. And advantages already in hand may be held by methods more subtle and informed, and more difficult to prove, than those which, in the first place, win a market. When the purpose to restrain trade appears from a clear violation of law, it is not necessary that all of the untraveled roads to that end be left open and that only the worn one be closed. The usual ways to the prohibited goal may be blocked against the proven transgressor and the burden put upon him to bring any proper claims for relief to the court's attention.

Id. at 399-400.

The very next year, in *United States v. Paramount Pictures, Inc.,* 334 U.S. 131 (1948), the Supreme Court again affirmed that otherwise lawful conduct, which did not form the basis for liability, nonetheless could be enjoined as part of an appropriate remedy. The Court examined, among other things, the practice of movie clearances, which are agreements between movie distributors and exhibitors that limit distribution of a given film to only a single exhibitor within a certain geographic area for a certain period of time. The Court held that clearances were not per se unlawful, but could be found to violate the antitrust laws depending on a number of factors, including their duration and geographic scope. In particular, the Court found that clearances could be lawful by providing some legitimate protection for a theatre to be able to recover its costs for licensing and exhibiting the film, again provided that they were limited in scope to only the area where other theatres competed and only for a limited duration. Nonetheless, because the record revealed that some clearances were used in conjunction with price fixing to suppress competition, the Court held that the trial court "could therefore have eliminated clearances completely for a substantial period of time . . . even though . . . they were not illegal per se." *Id.* at 148. The Court went on to uphold a decree provision that placed the burden on the defendant distributor to prove the legality of a clearance that was subsequently challenged – again, notwithstanding the fact that clearances were not in all instances unlawful and in fact were in some instances procompetitive.

Ford Motor Co. v. United States, 405 U.S. 562 (1972), involved a divestiture order designed to address an unlawful acquisition, but also set forth certain conduct remedies designed to ensure that the divested plant would be a viable future competitor. The conduct remedies, which included both affirmative and prohibited conduct wholly unrelated to the unlawful acquisition, were affirmed by the Supreme Court because they were deemed necessary

to address the unlawful conduct at issue, as well as assure the public that it will not occur in the future. *Id.* at 573 n.8; *see also United States v. Glaxo Group Ltd.,* 410 U.S. 52, 62-64 (1973) (Court holds that remedial order mandating compulsory licensing of product subject to unlawful patent pools).

In *National Society of Professional Engineers v. United States*, 435 U.S. 679 (1978), the government brought suit "to nullify an association's canon of ethics prohibiting competitive bidding by its members." *Id.* at 681. After concluding that the canon at issue was unlawful per se, the Court took up a challenge to a specific provision in the decree, which prohibited the association "from adopting any official position, policy statement, or guideline stating or implying that competitive bidding is unethical." *Id.* at 697. The defendant argued that this provision went beyond the specific conduct found to be unlawful (i.e., the canon prohibiting competitive bidding), and in any event abridged the defendant's First Amendment rights. The Court rejected these arguments, holding that it was "entirely appropriate" for the decree to "go[ ] beyond a simple proscription against the precise conduct previously pursued . . . ." *Id.* at 698. Indeed, the Court held that a decree may prevent certain conduct, even if not the subject of liability, so long as "the relief represents a reasonable method of eliminating the consequences of the illegal conduct." *Id.* "While it [the injunction] goes beyond a simple proscription against the precise conduct previously pursued, that is entirely appropriate." *Id.*

The message of these cases is clear: even otherwise lawful conduct may be and indeed must be enjoined if necessary to prevent the antitrust violator from adopting alternative strategies to reach the same anticompetitive ends that he attained by the specific conduct that has already been found to be a violation or to eliminate the consequences of the illegal conduct. Any remedy that fails to do so will not be able, in the context of this case and this market, to unfetter

the market and to prevent the recurrence of monopolistic practices in the future.

E. The Court of Appeals Did Not Announce a "Causation Test" that Trumps the Four Remedial Objectives for Monopolization Cases

1. Legal Standard Articulated by the Court of Appeals

Microsoft has argued that there is some threshold causation test that controls the appropriate remedy here and that plaintiffs have somehow failed to meet it. Microsoft's argument represents a misreading of the Court of Appeals discussion of the role of causation in remedy. Moreover, even if there were a causation test along the lines that Microsoft suggests, the States have met that test.

The Court noted, in discussing divestiture, that structural relief requires a "'*significant causal connection* between the conduct and creation or maintenance of the market power,'" and that "[a]bsent such causation, the antitrust defendant's unlawful behavior should be remedied by 'an injunction against continuation of that conduct,'" 235 F.3d at 106 quoting 3 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 653b, at 91-92, ¶ 650a, at 67 (1995).

It proves too much for Microsoft to use these references as the basis for some broad, new threshold requirement of causation in the law of monopolization remedies. The same treatise that the Court of Appeals cited, for example, provides a much more elaborate discussion of the appropriate scope of conduct relief in situations similar to this one:

> When a monopolist has consummated an exclusionary act or has been continuing an exclusionary practice, *equitable relief beyond a mere injunction against repetition of the act is generally appropriate*. *We must also try to undo the various effects of the act*. Further, the specific act under challenge may be unique to the circumstances and unlikely to be precisely "repeated." *As a result, injunctive relief must be tailored with sufficient breadth to ensure that a certain "class" of acts, or acts of a certain type or having a certain effect, not be repeated.*

3 Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 653f, at 102-03 (2d ed. 2002) (emphases supplied). Indeed, the authors specifically discussed what to do in situations in which

the unlawful conduct has itself made it difficult to assess the precise causal impact of the violations:

> It thus may be proper to invoke again the proposition that the monopolist bears the risk of the uncertain consequences created by its exclusionary acts. Thus, at the least, equitable relief properly goes beyond merely "undoing the act"; proper relief is to eradicate all the consequences of the act and provide deterrence against repetition; and any plausible doubts should be resolved against the monopolist.

Id. ¶ 653f, at 104.

In the context of non-structural relief, these comments do not create some new "causation" threshold before any remedy can be imposed that that goes beyond merely enjoining the specifics of the past, anticompetitive conduct. In trying to determine how one should "unfetter a market from anticompetitive practices," deny the antitrust violator the "fruits" of its violation, and prevent a "recurrence of such anticompetitive conduct" in the future, it will often be important to consider the competitive significance of the unlawful conduct. Greater adverse impact on competition can and will justify more stringent conduct remedies.

But, as Areeda & Hovenkamp point out, successful monopolization will often render proof of the specific consequences difficult, and antitrust remedies can only achieve their objectives if doubts in such situations are resolved against the monopolist.

The Court of Appeals somehow did not change the law of remedy with a new "causation" threshold. That position cannot be squared with the opinion, with the remaining body of § 2 law and even with the commentary on which it supposedly rests.

2. Plaintiffs Have Demonstrated Causation

Even if there were some type of causation test here, it would make no difference, because Plaintiffs have demonstrated a significant adverse impact from Microsoft's anticompetitive actions. In their motion for Judgment as a Matter of Law, Microsoft argued that plaintiffs' burden here could be met by a showing that the anticompetitive conduct had increased

the barriers to entry. That is precisely what plaintiffs' proof demonstrates. Both Navigator and Java had generated some significant momentum, and would have been in a position to take advantage of the positive feedback loop that often benefits software, but for Microsoft's anticompetitive actions. Shapiro Dir. ¶ 82. Moreover, the technologies involved—a browser and a runtime environment particularly suited to Internet applications—have if anything become even more important in the years since Microsoft's anticompetitive actions aimed at limiting their growth. Shapiro Dir. ¶ 83[2]; Tr. 1099:11-1105:12; 1116:2-1118:1 (Tiemann). Thus, by its campaign of anticompetitive actions aimed at Netscape and Java, Microsoft helped retard the development of technologies that had the potential to facilitate entry into the market for Intel-compatible PC operating systems. Microsoft's anticompetitive actions, in other words, increased or augmented the applications barrier to entry that would have otherwise protected Microsoft's desktop operating system monopoly. Shapiro Dir. ¶¶ 7, 22-24.

IV. Microsoft's Remedy Utterly Fails To Meet the Remedial Objectives Outlined by the Court of Appeals

No senior Microsoft executive testified regarding the justification for, or goals sought to be achieved by, Microsoft's Remedy. In its pleadings, however, Microsoft seems to have adopted the position that a remedy in this case need go no further than enjoining the twelve specific acts enumerated by the Court of Appeals as anticompetitive. *See, e.g.*, Defendant Microsoft Corporation's Motion *in Limine* To Exclude Testimony on Products Unrelated to the Limited Ground of Liability Upheld by the Court of Appeals, 98-1233, at 7-11. But as discussed *supra*, the remedial objectives mandated by the Court of Appeals cannot be met merely by ordering Microsoft to cease the specific acts directed against Navigator and Java that were held

[2] Microsoft has recently released a runtime environment as part of its .NET initiative, the Common Language Runtime ("CLR"), which in many ways is intended to compete with Java.

to be anticompetitive by the Court of Appeals. Hence, Microsoft's Remedy would fail to meet the objectives dictated by the Court of Appeals even if it succeeded in achieving the limited purpose of stopping the specific deeds enumerated as anticompetitive by the Court of Appeals. But Microsoft's Remedy fails even to achieve that de minimis goal.

A. Microsoft's Remedy Does Not Even Stop the Conduct Expressly Enumerated by the Court of Appeals as Anticompetitive, Which Microsoft Agrees a Remedy Should Prevent

Microsoft's Remedy has no provision that on its face prohibits the continuation of at least two of Microsoft's established anticompetitive acts: (1) commingling of software code and (2) deception of Java developers.

Even though the Court of Appeals held that Microsoft's "commingling [of] code related to browsing and other code in the same files, so that any attempt to delete the files containing IE would, at the same time, cripple the operating system" was anticompetitive, *Microsoft*, 253 F.3d at 64-65, Microsoft has not changed its practice of commingling Internet Explorer code with other code for the Windows operating system and, if anything, has only increased the extent of commingling since the liability trial ended. Tr. 4801:9-4801:23 (Gates), 4804:24-4805:16 (Gates). The provisions of Microsoft's remedy that enable OEMs and end-users to remove or disable end-user access to Microsoft middleware do nothing to deal effectively with two aspects of the commingling issue as defined by the Court of Appeals: (a) the adverse effect of commingling in reducing the willingness of OEMs to carry competing middleware, and (b) the effect of commingling on the presence of the Windows APIs, and on the incentives of software developers to write applications primarily or exclusively for those Windows APIs, and thereby to maintain or augment the applications barrier to entry. Mr. Gates and Chris Jones both admitted that removing end-user access to middleware does nothing to change the fact that the APIs exposed by the middleware are still available to software

developers. Tr. 4880:3-17 (Gates); Tr. 5182:13-5184:17 (Jones); *see also* Tr. 5984:10-20 (Madnick); Richards Dir. ¶¶ 162-63, 168.

Similarly, no provision of Microsoft's Remedy would stop or prevent the deception of Java developers with respect to whether the programs they were developing for Microsoft's Java Virtual Machine ("JVM") were in fact cross-platform, as they had been led to expect, or rather compatible only with Windows and the Microsoft JVM.

Moreover, the key provisions of Microsoft's Remedy, which ostensibly address the acts found anticompetitive by the Court of Appeals, are plagued with exceptions or ambiguities, or rely upon overly restrictive definitions, so that they would not in fact completely stop or prevent even the other ten specific acts that even Microsoft agrees were found to be anticompetitive and must be addressed.

Microsoft's Remedy III.C: An exception in Remedy III.C.2 permits Microsoft to prohibit an OEM from displaying shortcuts on the desktop that, in Microsoft's determination, "impair the functionality of the user interface," so that Remedy III.C.2 does not address the anticompetitive conduct actually found by the Court of Appeals: Microsoft's prohibition on the addition of icons or folders different in size or shape from those supplied by Microsoft, and its prohibition on the use of Active Desktop to promote third party brands, *see Microsoft*, 253 F.3d at 62. In addition, the flexibility expressly retained by Microsoft under III.C.1, permitting Microsoft to prohibit OEMs from promoting middleware in "any list of . . . icons, shortcuts, or menu entries specified in the Windows documentation as being limited to products that provide particular types of functionality," further undermines the ability of Microsoft's Remedy to address the anticompetitive conduct.

Remedy III.C.5 contains an exception permitting Microsoft to prohibit

modifications of the boot sequence that do not "compl[y] with reasonable technical specifications established by Microsoft." Thus, this remedy fails to fully address the behavior actually found by the Court of Appeals to be anticompetitive, namely "the prohibition on modifying the boot sequence" of Windows, *Microsoft*, 253 F.3d at 62.

Microsoft's Remedy III.F: The lack of a definition of "retaliation" in Remedy III.F.1, and the fact that it is far from clear that such remedy would cover threats as opposed to adverse actions, renders it unlikely to address the liability findings regarding Microsoft's threats against Apple and Intel for their support, respectively, of Navigator and Java, *Microsoft*, 253 F.3d at 73-74, 77.

III.F.2 contains an exception that permits Microsoft to enter into agreements that "place limitations on an ISV's development, use, distribution, or promotion of any such software [that competes with Microsoft Platform Software or any software that runs on any software that competes with Microsoft Platform Software] if those limitations are reasonably necessary to and of reasonable scope and duration in relation to a bona fide contractual obligation of the ISV to use, distribute or promote any Microsoft software or to develop software for, or in conjunction with, Microsoft." This exception would expressly permit precisely the exclusive deal with Apple that Microsoft entered into with Apple, which the Court of Appeals found illegal. *Microsoft*, 253 F.3d at 73-74. That same exception would also permit Microsoft to enter into the very "First Wave" agreements with ISVs and Java developers that the Court of Appeals held to be illegal. *Microsoft*, 253 F.3d at 71-72 (agreements to give ISVs preferential support in exchange for the ISVs' use of Internet Explorer as the default and the ISV's use of "HTML Help," which is accessible only with Internet Explorer); *id.* at 75 (agreements to give Java developers "costly technical support and other blandishments" in exchange for the developers' agreement "to make

their Java applications reliant on Windows-specific technologies and to refrain from distributing to Windows users JVMs that complied with Sun's standards").

Microsoft's Remedy III.G: The exception in Remedy III.G permitting Microsoft to enter into exclusive deals as part of a "bona fide joint venture," "joint development" arrangement, or "joint services arrangement"—terms that are never defined in Microsoft's Remedy—prevent that remedy from addressing the agreements with IAPs to "provide easy access to [certain] IAPs' services from the Windows desktop in return for the IAPs' agreement to promote IE exclusively and to keep shipments of internet access software using Navigator under a specific percentage, typically 25%," *Microsoft*, 253 F.3d at 68, or the exclusive "First Wave" agreements with ISVs and Java developers that the Court of Appeals found to be anticompetitive, *id.* at 71-72, 75.

III.G.1's inability to address the anticompetitive conduct found by the Court of Appeals is further confirmed by the broad exception permitting "agreements in which [a third-party] entity agrees to distribute, promote, use or support Microsoft Platform Software in a fixed percentage whenever Microsoft in good faith obtains a representation that it is commercially practicable for the entity to provide equal or greater distribution, promotion, use or support for software that competes with Microsoft Platform Software" (even if the third party does not actually provide such distribution, promotion, use or support) and the exclusion of "agreements in which Microsoft licenses intellectual property in from a third party" (even though licensing of intellectual property is a routine part of many software deals). These exceptions have the potential to swallow the rule, and in any event are subject to manipulation.

Microsoft's Remedy III.H: Remedy III.H.1 applies only to "Microsoft Middleware Products," defined in Microsoft's Remedy VI.K, and thus excludes a broad swathe

of current and future Microsoft products, such as: (a) any existing Microsoft product other than Internet Explorer, the Microsoft Java Virtual Machine, Windows Media Player, Windows Messenger, and Outlook Express; (b) any future Microsoft product—other than Internet browsers, e-mail client software, networked audio/video client software, or instant messaging software—that (i) Microsoft chooses not to distribute along with Windows, or (ii) has no competitor product that has yet achieved distribution of one million copies per year, or (iii) Microsoft chooses not to trademark. As a result, with respect to numerous types of middleware, this remedy would not prevent Microsoft from repeating its proven anticompetitive conduct aimed at blocking the OEM channel of distribution, including the prohibition on the removal of desktop icons, folders, and Start menu entries, *Microsoft*, 253 F.3d at 61, and the exclusion of Internet Explorer from the add/remove program utility, *id.* at 65.

III.H.1 also would enable Microsoft to prevent OEMs from adding an icon for new non-Microsoft middleware that has not yet obtained distribution of one million copies per year, as Microsoft Vice President Chris Jones admitted at trial. Tr. 5236:13-5237:11 (Jones).

B. Microsoft's Remedy Fails To Protect Other Nascent Technologies that Are Potential Platform Threats from the Use of Same or Similar Exclusionary Practices that Were Found Illegal by the Court of Appeals

Microsoft's remedy also fails to protect other nascent technologies that are potential platform threats from the use of the same or similar exclusionary practices that were found illegal by the Court of Appeals by, among other things, (a) its very narrow definition of middleware, (b) its exclusion of competing operating systems, most notably Linux, from many of its protections, and (c) its exclusion of Web services, which Microsoft itself has described as the most important platform for software development in the immediate future. Microsoft's Remedy also does not address the disclosure of necessary protocols, interfaces, and technical information to allow interoperability between Windows and other non-PC computers, such as PDAs,

telephones, and television set-top boxes, that threaten to diminish the importance of Microsoft's desktop PC operating system monopoly.

C. Microsoft's Remedy Does Not Deny the Violator the Fruits of Its Statutory Violation Nor Does It Effectively Restore the Potential Competition Eliminated by Microsoft's Conduct

As discussed *supra*, an effective remedy must ensure that Microsoft cannot benefit from any market position or other advantages it gained through its exclusionary acts. But Microsoft's Remedy does not deny it the fruits of its statutory violation, because it leaves wholly intact: (1) Microsoft's proprietary dominant Internet browser, and (2) the absence of any meaningful platform threat from desktop Java. Microsoft's Remedy does nothing to prevent Microsoft from continuing to benefit from its control over Internet Explorer, the dominant Internet browser, whose dominance resulted from Microsoft's illegal conduct. Because of this control, ISVs develop third-party applications using Internet Explorer's APIs rather than those of any other browser, Web-content developers write to Internet Explorer's specifications rather than those of any other browser, and the ability of numerous other nascent technologies to threaten the Windows monopoly is severely hampered, so that Internet Explorer's dominance greatly assists Microsoft's ability to maintain its operating-system monopoly in today's world of networked computing. Moreover, Microsoft's Remedy does not address Microsoft's illegal destruction of desktop Java, which was and remains a viable cross-platform development environment that could help erode the applications barrier to entry, had Microsoft not used its monopoly power to destroy Netscape, the primary means of distribution of Java, and engaged in various other anticompetitive means to neutralize the cross-platform threat that Java presented.

Moreover, Microsoft's Remedy would not meaningfully help reduce the artificially maintained applications barrier to entry into the market for desktop PC operating systems; an effective remedy must do so directly by restoring that barrier to the level it would

have been but for Microsoft's unlawful monopoly maintenance. For example, even though it is widely acknowledged that rival desktop operating systems cannot effectively compete with Windows unless especially popular applications can be made available on those operating systems, Microsoft's remedy does nothing to give competing platform developers the ability to support some of the software programs that currently run only on Windows.

D. Microsoft's Remedy Would Not Prevent Microsoft from Using Other Practices that Will Have the Same Adverse Effects on Potential Platform Threats as Those Found Illegal by the Court of Appeals

Microsoft's Remedies III.A and III.B would not prevent Microsoft from using threats, inducements, and retaliation against OEMs to foreclose the OEM channel of distribution from competing platform software. By using threats, inducements, and retaliation against OEMs, Microsoft could again foreclose the OEM channel of distribution to competing middleware platforms, which the Court of Appeals found to constitute anticompetitive behavior. *Microsoft*, 253 F.3d at 60-64. Remedies III.A and III.B suffer from the following flaws, among others:

- Remedy III.A states broadly that "Nothing in this provision shall prohibit Microsoft from providing Consideration to any OEM with respect to any Microsoft product or service where that Consideration is commensurate with the absolute level or amount of that OEM's development, distribution, promotion, or licensing of that Microsoft product or service." This provision allows Microsoft to unequally distribute "consideration" to favored OEMs and in effect to retaliate against disfavored OEMs, despite supposedly uniform licensing.
- Remedy III.A would permit Microsoft to withdraw any OEM's Windows license, without notice, so long as Microsoft has alleged two prior violations of the license terms. That provision imposes no requirement that the prior violations have any basis in fact.
- Remedy III.A bars only certain types of Microsoft retaliation—"altering Microsoft's commercial relations with [an] OEM or . . . withholding newly introduced forms of non-monetary Consideration." Like III.F.1, III.A does not cover threats, and would not cover conduct against OEMs similar to Microsoft's threats against Apple and Intel for supporting Navigator and Java, respectively.
- Remedy III.B, although purporting to require "uniform license agreements" with

OEMs, expressly permits Microsoft to offer market development allowances to reward OEMs who promote Microsoft products over those who do not.

Microsoft's Remedies III.C and III.H would not prevent Microsoft from denying OEMs the ability to configure PCs to effectively promote competing platform software. Unless developers of competing platform software have the opportunity to promote their software on the PC, they will not likely be able to compete with Microsoft's platform software, because Microsoft controls the primary distribution channel and the means to configure the Windows desktop. Although certain provisions of Microsoft's Remedy seem as though they might provide OEMs with flexibility to configure PCs to enable the promotion of competing platform software, in fact Microsoft retains the power to deny the flexibility necessary to protect nascent platform threats. Remedies III.C and III.H suffer from the following flaws, among others:

- Microsoft's Remedies III.C.1 and III.H.1 only give OEMs the right to promote icons, shortcuts and menu entries for non-Microsoft products anywhere Microsoft promotes its own products with similar functionality. OEMs therefore would not have the right to feature middleware offered by competitors if Microsoft does not promote its own product in a similar manner or if Microsoft does not offer a product with similar functionality.
- Microsoft also retains the power under III.C.1 to prohibit OEMs from placing icons, shortcuts, and menu entries in "any list of such icons, shortcuts, or menu entries specified in the Windows documentation as being limited to products that provide particular types of functionality." Additionally, Microsoft retains the right to restrict OEMs from displaying icons, shortcuts, or menu entries to the desktop or Start menu or "anywhere else in a Windows Operating System Product where a list of icons, shortcuts, or menu entries for applications are generally displayed." These restrictions allow Microsoft to maintain substantial control over the way in which OEMs use the flexibility supposedly provided to them.
- At first blush, Microsoft's Remedy III.C.3 seems to require Microsoft to allow OEMs to configure PCs to automatically launch competing middleware at the conclusion of the initial boot sequence or upon connections to, or disconnections from, the Internet. But in fact, that provision only applies "if a Microsoft Middleware Product that provides similar functionality" to the competing product otherwise would launch automatically. Hence, if Microsoft has no competing middleware product (which, for example, was the case when Netscape's Navigator came out), Microsoft could prevent any non-Microsoft product from launching automatically.

- Remedy III.C.3 allows Microsoft to restrict OEMs from launching a middleware product if Microsoft's competing product would not otherwise launch "at that time." Accordingly, Microsoft can determine whether OEMs can launch a competitor's product by altering its own product engineering decisions.
- Moreover, because III.C.3 invokes the definition of "Microsoft Middleware Product," VI.K, it does not provide any protections to non-Microsoft middleware that competes with: (a) any existing Microsoft product other than Internet Explorer, the Microsoft Java Virtual Machine, Windows Media Player, Windows Messenger, and Outlook Express; (b) any future Microsoft product—other than Internet browsers, e-mail client software, networked audio/video client software, or instant messaging software—that (i) has no competitor product that has yet achieved distribution of one million copies per year, or (ii) Microsoft chooses not to distribute along with Windows, or (iii) Microsoft chooses not to trademark.
- Microsoft's Remedy III.H.2 appears to require Microsoft to allow OEMs to set non-Microsoft middleware as the default in instances where middleware would normally be launched. But this provision is only invoked if the non-Microsoft middleware sought to be used as a default competes with a "Microsoft Middleware Product" that: (a) launches in a separate top-level window and (b) displays either "all of the user interface elements" or the Microsoft trademark. Hence, under Microsoft's Remedy, Microsoft would not need to permit OEMs to set non-Microsoft middleware as the default if it merely embeds Microsoft middleware within other middleware, or opts not to trademark it.
- Under III.H.2, truly innovative middleware threats will never be protected, because the remedy does not apply if Microsoft has not yet produced middleware that performs the same functionality. Thus, III.H.2 protects Microsoft from competitors' innovations.
- Because III.H.1 and III.H.2 invoke the definition of "Non-Microsoft Middleware Product," VI.N, neither would provide any protection to any non-Microsoft middleware that has not distributed at least one million copies in the previous year. Thus, new products would not be protected until they have achieved a significant level of success, even though the achievement of such success would likely depend upon the kinds of protections Microsoft's Remedy purports to provide.
- Under III.H.3 of Microsoft's Remedy, Microsoft has retained the power to "sweep" a computer's desktop of all icons only 14 days after the end user first boots up a new computer. Therefore, Microsoft can effectively remove all of the icons that an OEM has placed on the computer's desktop after a mere 14 days. No OEM will spend the resources involved in customizing a computer by placing icons on the desktop knowing that those icons will likely only be present for 14 days. Further, Microsoft may continually prompt users to alter default settings to use only Microsoft's software.

Microsoft's Remedies III.D, III.E and III.I would not prevent Microsoft from

denying competing platform software developers the ability to interoperate effectively with Windows. If Microsoft is permitted, through nondisclosure or selective disclosure of key interfaces, protocols, and technical information, to enable its own platform software and non-PC devices to interoperate more effectively with Windows than those offered by competitors, then rival developers of middleware, server operating systems, and other non-PC platform software will have no real opportunity to compete with Microsoft. Moreover, without an adequate disclosure remedy, Microsoft would continue to have the ability to use selective disclosure to disadvantage its platform competitors. Remedies III.D, III.E and III.I are quite narrow and contain numerous exceptions that greatly limit Microsoft's disclosure obligations:

- The term interoperate can have a broad range of meanings, according to Microsoft's experts, yet Microsoft's Remedy fails to define this important term.
- Microsoft's Remedy III.D purports to require disclosure of APIs between Windows and its own middleware, but it exempts important categories of its middleware—and thus the Windows APIs that they use—from the disclosure requirements.
- Microsoft's Remedy leaves it to Microsoft's discretion whether to disclose new Windows APIs used by future middleware products.
- Microsoft's Remedy does not require the disclosure of APIs exposed by Microsoft middleware—even middleware such as the most recent Windows Media Player that is *only* distributed bundled into the Windows Operating System Product.
- Microsoft's Remedy III.E purports to require disclosure of protocols used by different computer systems to communicate with one another, but it excludes important categories of protocols—such as those used to enable server-to-server interoperation.
- Microsoft's Remedy does not require disclosure of the technical data needed by developers to make effective use of the disclosed APIs and protocols.
- Microsoft's Remedy does not allow developers to review the Microsoft source code—a step that Microsoft's own witnesses say is sometimes necessary to create interoperable software products.
- The disclosures of APIs and protocols under Microsoft's Remedy come far too late in the development cycle and permit Microsoft's own developers to work with new software code long before it is made available to third party developers.
- The disclosures under Microsoft's Remedy can be used only for a single, limited purpose—namely, to create software that interoperates with Windows—and therefore does not allow for the creation of competing platform software.

- Microsoft's Remedy contains an overly broad and technically unjustified "security" exception that threatens to undermine entirely Microsoft's obligation to disclose APIs and protocols.
- Microsoft's Remedy III.I.1 permits Microsoft to charge a royalty for the use of APIs and protocols disclosed pursuant to III.D and III.E, even though Microsoft generally does not charge for these licenses, Tr. 4567:11-24 (Gates), and could foreclose entry into the market of new products developed by start-up companies that may not be able to afford licensing fees to make use of interoperability disclosures. *See* Gates Dir. ¶¶ 106-10; Richards Dir. ¶ 110; Schwartz Dir. ¶¶ 140-41; Pearson Dir. ¶ 73.
- Section III.I is also deficient because it does not prohibit Microsoft from exacting terms in its intellectual property license that would benefit Microsoft's platform technologies. For example, under III.I it would be permissible for Microsoft to limit the use of the disclosures it makes to interoperation with Microsoft software. Such restrictions could limit the extent to which the disclosures would actually foster cross-platform competition.

Microsoft's Remedies III.F and III.G would not prevent Microsoft from entering into exclusive agreements designed to foreclose the development, use, distribution, promotion, or support of competing middleware. If Microsoft is permitted to enter into exclusive agreements with respect to its middleware or other platforms, it will have the ability to foreclose the development, use, distribution, promotion, or support of competing middleware and platforms. III.F and III.G would fail to prevent Microsoft from using exclusive agreements to shut down important platform threats:

- As Microsoft concedes, the restriction on agreements limiting competition in Microsoft's Remedy III.F.2 only applies to agreements relating to Windows Operating System Products, so that an exclusive dealing arrangement that relates to other Microsoft platform software, such as Internet Explorer, or whereby Microsoft simply offers consideration in exchange for an ISV's agreement not to develop, use, distribute, or promote non-Microsoft platform software, would not be prohibited.
- Remedy III.G, which appears as though it restricts exclusive and fixed-percentage agreements, applies only to "Microsoft Platform Software," VI.L, which is constrained by the narrow definition of "Microsoft Middleware Product," VI.K, which excludes: (a) any existing Microsoft product other than Internet Explorer, the Microsoft Java Virtual Machine, Windows Media Player, Windows Messenger, and Outlook Express; (b) any future Microsoft product—other than Internet browsers, e-mail client software, networked audio/video client software, or instant messaging software—that (i) Microsoft chooses not to distribute along with Windows, or (ii) has

no competitor product that has yet achieved distribution of one million copies per year, or (iii) Microsoft chooses not to trademark.

V. States' Remedy Advances the Remedy Objectives Articulated by the Court of Appeals

Unlike Microsoft's remedy, the States' remedy is designed to and does advance the remedial objectives identified by the Court of Appeals. The States' Remedy will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by, *inter alia*:

(i) preventing the continued use of the particular exclusionary practices Microsoft aimed at Navigator and Java, e.g., prohibiting commingling (Remedy 1), prohibiting restrictions on OEM flexibility to promote competing middleware (Remedy 2), prohibiting exclusive arrangements to promote IE to the exclusion of Navigator (Remedy 6), banning retaliation for the use of competing browsers (Remedy 8), banning retaliation for participation in the litigation (Remedy 9) and prohibiting deception as to the cross-platform capabilities of its Java tools (Remedy 16);

(ii) protecting other nascent technologies that are potential platform threats from the use of those same or similar exclusionary practices in the future by, for example, defining middleware to include various forms of middleware with platform threat potential, including the software for server operating systems, Web services, handheld devices and set-top boxes, and ensuring that the States Remedies' substantive protections reach not only middleware as so defined, but also competing operating systems, such as Linux (Remedy 2, Remedy 4, *etc.*); and

(iii) preventing the use of other practices that will predictably have the same adverse effects on potential platform threats that might otherwise lower the applications barrier

to entry or bring competition directly into the market for Intel-compatible PC operating systems by, for example, mandating the disclosure of information about APIs and interfaces necessary to effective interoperability (Remedy 4), prohibiting the purposeful degradation of the performance of competing software (Remedy 5), banning contractual tying (Remedy 7), requiring respect for user choices of default software (Remedy 10), preventing agreements not to compete with nascent platform threats (Remedy 11) and limiting the use of claimed adherence to and proprietization of industry standards to frustrate cross-platform interoperability (Remedy 16).

The States' Remedy will also unfetter the market from anticompetitive practices and prevent a recurrence of monopolization in the future by reducing directly the applications barrier to entry in order to restore that barrier to the level it would have been absent any unlawful conduct by, for example, requiring the distribution of Java with Windows (Remedy 13), providing for the porting of Office to other operating systems (Remedy 14), and enabling the development of alternative middleware and operating systems that can support some of the functionalities of the Windows platform (Remedy 4).

The States' Remedy will also unfetter the market from Microsoft's anticompetitive practices and insure that Microsoft does not benefit from the "fruits" of its statutory violation by, for example, requiring the distribution of Java with Windows (Remedy 13) and mandating that Internet Explorer be made available to others through an open-source license arrangement (Remedy 12). The States' Remedy will also achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by providing for effective enforcement mechanisms for its substantive provisions by recognizing the importance of internal compliance, prompt dispute resolution, significant sanctions for non-compliance and timely

notification of Microsoft's actions to those charged with enforcement (Remedy 17-21).

VI. There Is No Basis for Deference to the Department of Justice in This Litigated Remedy Proceeding

There has been a suggestion that this Court should in the exercise of its discretion defer to some extent to the judgment of the Department of Justice as reflected in its proposed settlement with Microsoft. The approval or rejection of that settlement is a matter of litigation in what this Court has denominated as Track I, which is and has been separate and distinct from this litigated remedy proceeding since the Department settled and the cases were deconsolidated. Moreover the Department has not been a party to these proceedings and has not been in a position to consider the extensive evidentiary record or the parties proposed findings of fact.

The Supreme Court has also made it clear in *California v. American Stores Co.*, 495 U.S. 271 (1990) and in *Zenith Radio Corp. v. Hazeltine Research, Inc*., 395 U.S. 1000 (1969) that (a) there is no reason why parties other than the United States are entitled to any less injunctive relief than a government plaintiff would be, and (b) that the broad purpose of enhancing competition must be kept in mind in any suit seeking injunctive relief, including a suit by a sovereign State.

For all these reasons, there is no convincing rationale or mechanism for deferring to the Department of Justice in determining which set of remedial proposals are needed to best advance the objectives for monopolization relief outlined by the Court of Appeals.

VII. Conclusions Regarding the Specific Remedies To Be Implemented

For the reasons set forth above, it is clear that the Plaintiff States have proposed a comprehensive set of remedies designed to meet the remedial objectives outlined by the Court of Appeals. It is likewise clear that Microsoft has not – indeed, it has not even proposed a remedy that would clearly prevent its repetition of specific acts found to be anticompetitive by the Court

of Appeals. The Court sets below its Conclusions as to each proposed remedy.

A. Uncommingling – Remedy 1

Remedy 1, which prevents continued commingling unless Microsoft also offers an uncommingled version of Windows from which middleware may be readily removed, is necessary to stop a practice that was identified as unlawful by the Court of Appeals but has continued unabated. It will, moreover, achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future. Microsoft's arguments as to infeasibility are not sufficient to overcome the need to halt an ongoing violation, particularly given (a) its recent marketing of a product, Windows XP Embedded, that specifically enables the building of a componentized operating system, (b) its refusal to date to commit any engineering resources to actually investigate means of compliance, and (c) the safety-valve in the provision in the event Microsoft makes good faith efforts and for some reason cannot comply.

Microsoft's expression of concern about "fragmentation" is likewise unavailing. It is clear upon examination that fragmentation exists to a significant degree today, since each new version of Windows has a different set of APIs exposed, and yet ISVs, OEMs, consumers and Microsoft manage to function. It is also clear that Microsoft's opposition to fragmentation is little more than a monopolist's expression of the view that it desires to be able to dictate choices, rather than allowing real consumer choice to be reflected in the marketplace. That type of concern is no better than the desire to keep developers focused on the Windows APIs, rather than rival APIs – an objective that the Court of Appeals said was certainly not procompetitive. *Microsoft*, 253 F.3d at 72.

B. OEM Flexibility – Remedy 2

States' Remedy 2 contains several different provisions that are designed to free

OEMs from the various contractual and non-contractual methods that Microsoft historically has employed to dominate and control how OEMs design, configure and promote PCs and the software pre-installed on PCs. Because OEMs are dependent upon having a Windows license, and need to be afforded terms as favorable as competing OEMs, Microsoft has enormous leverage over how OEMs configure PCs and what software is pre-installed on a PC. States' Remedies 2.a and 2.b ensure that Microsoft will not use the availability or unavailability of Windows licensing terms, conditions or support (both financial and non-financial) to induce or coerce OEMs to limit in any fashion the distribution of rival software. Remedy 2.c then provides OEMs with the freedom to configure PCs as they see fit and to promote non-Microsoft software in the manner that they wish, free from restrictions imposed by Microsoft.

As prior proceedings in the case have made clear, Microsoft imposed a variety of restrictions on OEMs that purposefully limited the threat that competing middleware might pose to Microsoft's monopoly in the Intel-compatible personal computer operating systems market. Many of Microsoft's acts of unlawful monopoly maintenance were designed to prevent emerging technologies from access to cost-effective distribution through OEMs. OEMs are a critical distribution channel for promoting software applications in general, and middleware products in particular, to consumers. *Microsoft,* 253 F.3d at 61; *Microsoft,* 84 F. Supp. 2d at 46-47, Findings Nos. 144-45. Because Windows PCs represent the overwhelming majority of PCs sold to consumers in the United States, an effective remedy must prohibit Microsoft from interfering, whether by reward or retaliation, with OEMs' ability to choose and distribute middleware products and offer non-Microsoft software innovations.

Thus, States' Remedies 2.a and 2.b will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of

practices likely to result in monopolization in the future by preventing the use of practices that will predictably have the same adverse effects on potential platform threats, and by creating an environment in which OEMs are likely to take advantage of the flexibility given them in Remedy 2.c. Remedy 2.c will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by preventing the continued use of a particular anticompetitive practice, the imposition by Microsoft of license restrictions that limit OEMs' flexibility to promote competing platform threats.

C. Licensing of Predecessor Versions – Remedy 3

Remedy 3 restricts Microsoft from using its control of the dominant software platform to force licensees, developers and consumers to upgrade to new versions of Windows. This loosens Microsoft's control over the OEM channel of distribution and provides developers of platform threats, whose products require, at least initially, interoperability with Windows, with assurance that the version of Windows with which they achieve interoperability (through, e.g., use of disclosure provided under Remedy 4) will be available and supported for a significant length of time. Without this guarantee, such products may never come to market or may fail due to interoperability problems with the latest version of Windows.

Remedy 3 is necessary because Microsoft has the unquestionable ability to thwart any middleware threat by simply introducing a new version of Windows that contains technical changes that render the competing middleware either non-interoperable or degraded when compared to Microsoft middleware. Microsoft's commingling of code for Internet Explorer in Windows 98 is an example of a technical change made to a new version of Windows that had anticompetitive effects on competing middleware that enjoyed widespread success running on

the predecessor version of Windows. *Microsoft*, 253 F.3d at 64-67. Remedy 3 also benefits consumers by providing them additional choices in products, and lessening Microsoft's ability to coerce Windows users to upgrade when they are satisfied with the predecessor version.

Thus, States' Remedy 3 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by preventing the use of practices that will predictably have the same adverse effects on potential platform threats.

D. Disclosure – Remedy 4

The purpose of States' Remedy 4 is to promote opportunities for competing software platforms by broadly requiring disclosure of the interfaces and technical information needed to interoperate effectively with applications and middleware used by Microsoft Windows-dominated PCs, as well as with the Windows PC operating system itself. This purpose is expressly stated by States' Remedy 4.a, which would require Microsoft to make available to third parties APIs, Technical Information, and Communications Interfaces "for the purpose of enabling non-Microsoft Platform Software and non-Microsoft applications to Interoperate with Microsoft Platform Software and/or applications for Microsoft Platform Software."

The broad disclosure mandated by States' Remedy 4 is necessary for at least two reasons. *First*, Remedy 4 is necessary to ensure that the information needed to interoperate with Microsoft platform software is disclosed to third parties on a full, timely, and non-discriminatory basis. Remedy 4 prevents Microsoft from controlling access to information about its interfaces and other technical information in a manner that disadvantages competing software platforms. It also allows for the emergence of software platforms that can compete effectively with Microsoft Windows, whether those platforms take the form of middleware, Web services, competing

operating systems, or some other platform. To flourish, such platforms, at least initially, need the ability to interoperate with the ubiquitous PC operating system. *Second*, to overcome the applications barrier to entry that Microsoft strengthened through its anticompetitive practices, States' Remedy 4 gives competing software platform developers the information and ability to support some of the software programs that currently run only on Windows.

States' Remedy 4 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by protecting nascent technologies that are potential platform threats from the use by Microsoft of practices that are the same or similar to the practices found anticompetitive by the Court of Appeals. Remedy 4 will achieve this effect by, for example, encompassing the interoperation among numerous pieces of software and devices with platform threat potential, including server operating systems, Web services, handheld devices and set-top boxes, and ensuring that interoperability disclosures reach not only middleware as broadly defined, but also competing operating systems, such as Linux. By mandating the disclosure of information about APIs and interfaces necessary to effective interoperability, Remedy 4 will also achieve the Court of Appeals' unfettering and prevention objectives by preventing the use of a practice, the withholding and/or selective disclosure of interoperability information, that will predictably have the same adverse effects on potential platform threats. Moreover, by enabling the development of alternative middleware and operating systems that can support some of the functionalities of the Windows platform, Remedy 4 also unfetters the market and prevents a recurrence of practices likely to result in monopolization by reducing directly the applications barrier to entry. The effect will be to help restore that barrier to the level it would have been absent any unlawful conduct.

Microsoft's claim that States' Remedy 4.c – which allows access to source code at a secure facility for the purpose of ensuring interoperability – would permit the copying of Microsoft's source code, is without merit. The requirement that Microsoft provide "reasonable access" to source code would permit Microsoft to require entrants to the secure facility to execute appropriate nondisclosure agreements, as is the normal practice in the software industry, DX 1530, at 112:7-113:23, 134:18-135:16 (Greene Deposition), and to provide Microsoft with recourse in the event that a third party attempts to access the source code for an improper purpose, such as software piracy, *id.* at 134:22-135:16. Remedy 4.c itself limits third parties to seeking access to the secure facility "for the purpose of enabling their software to Interoperate effectively with Microsoft Platform Software," and thus does not authorize Microsoft's competitors to review the source code for purposes of creating competing software products. Moreover, copying the tens of millions of lines of source code that comprise Windows XP would require the examiner to memorize every line of code, an impossible task. Appel Dir. ¶ 113. Indeed, Microsoft already permits access to source code to numerous third parties, Appel Dir. ¶ 95 & n.7; Shapiro Dir. ¶ 151 & n.32.

Similarly, Microsoft's claim that States' Remedy 4 would require the disclosure of interfaces exposed by components of middleware, is predicated on a misreading of Remedy 4. Because the term "Microsoft Middleware Product," as used in States' Remedy 22.x.ii, refers to complete middleware products rather than fragments or components of them, Tr. 3121:3-3125:5 (Appel), only interfaces exposed by compete middleware products, and not those used by sub-components of middleware to call upon each other's functionality, would need to be disclosed.

E. Prevention of Intentional Degradation – Remedy 5

States' Remedy 5 prohibits Microsoft from knowingly interfering with or

degrading the performance or compatibility of non-Microsoft Middleware when interoperating with Microsoft Platform Software, other than for good cause. If Microsoft takes such an action with good cause, the company must provide notice to the affected developer(s) of the non-Microsoft software no less than 60 days in advance. Thus, States' Remedy 5 will prevent Microsoft from frustrating the efforts of third-party developers to create products that serve as platform threats by hampering their ability to create products that interoperate with Windows, thereby achieving the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future.

The need for Remedy 5 is confirmed by the District Court's finding that Microsoft intended its binding of Internet Explorer to Windows to "complicate the experience of using Navigator with Windows 95," *Microsoft*, 84 F. Supp. 2d at 50, Finding No. 160, and by evidence presented during the remedy proceeding demonstrating that Microsoft has taken actions that it knew or reasonably should have known would interfere with or degrade the performance of non-Microsoft middleware. Two witnesses for the States—Dr. Carl Ledbetter of Novell and Mr. David Richards of RealNetworks—provided specific examples of instances in which developers of non-Microsoft middleware would have benefited from the requirements of Remedy 5.

F. Ban on Exclusive Deals – Remedy 6

States' Remedy 6 imposes an unconditional ban upon Microsoft's entering into exclusive deals with third parties. The goal of Remedy 6 is to prevent Microsoft from stifling competition from future platform threats to its operating-system monopoly by broadly prohibiting the types of anticompetitive, exclusive agreements that it exacted from IAPs, ISVs, and Apple. Recognizing that Microsoft has shown great creativity in the inducements it has

offered third parties in the past, States' Remedy 6 bans all forms of "consideration" that Microsoft might offer in exchange for exclusive dealing. Remedy 6 prohibits cash payments, but it also disallows Microsoft from offering special placement on the Windows desktop, such as it offered AOL, *Microsoft*, 84 F. Supp. 2d at 77, Finding No. 272, "'preferential support, in the form of early . . . betas, other technical information, and the right to use certain Microsoft seals of approval,'" as it offered ISVs in the First Wave agreements, *Microsoft*, 253 F.3d at 72 (quoting *Microsoft*, 84 F. Supp. 2d at 93, Finding No. 339), and any other blandishments that Microsoft might dream up to offer a third party in exchange for an exclusive deal.

States' Remedy 6 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by preventing the continued use of a particular exclusionary practice, the use by Microsoft of exclusive arrangements to promote its middleware at the expense of a platform threat.

G. Ban on Contractual Tying – Remedy 7

States' Remedy 7 prevents Microsoft from using its monopoly power to force OEMs and other Windows licensees to adopt Microsoft Middleware Products by contract. Such contractual coercion prevents the distribution of non-Microsoft middleware, because rival middleware vendors must convince OEMs and other Windows licensees to carry their product as well as the corresponding Microsoft middleware for which they have already paid. "[S]uch contractual tying by Microsoft can impede the adoption of non-Microsoft middleware." Shapiro Dir. ¶ 168. Microsoft continues today to force OEMs to license Microsoft middleware through contractual ties.

This remedy also complements other remedies put forward by the States (including

Remedies 1 and 2.c) that prohibit Microsoft from technologically bundling its middleware with Windows, and thus provides OEMs and other Windows licensees with the freedom to choose, promote and distribute non-Microsoft software that may threaten Microsoft's monopoly. In particular, Remedy 7 ensures that Microsoft cannot achieve contractually what Remedies 1 and 2.c prohibit technologically, *i.e.*, forcing Windows licensees to carry and promote Microsoft middleware and its APIs, thus maintaining the applications barrier to entry and restricting the OEM channel of distribution.

Remedy 7 thus achieves the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by, in conjunction with Remedies 1 and 2.c, stripping Microsoft of its ability to close critical core channels of distribution to third-party developers and thus suppress nascent platform threats.

H. Ban on Retaliation for Support of Competitors – Remedy 8

States' Remedy 8 will prevent Microsoft from taking or threatening actions that adversely affect various categories of third parties based on the fact that the third party takes or contemplates action to support or promote a non-Microsoft product or service. The purpose of Remedy 8 is to halt Microsoft's past retaliatory behavior, and to prevent Microsoft from engaging in the same, similar or additional conduct in the future. Remedy 8 is *not* designed to prevent Microsoft from taking legitimate pro-competitive actions that, if successful, might result in Microsoft making competitive gains at the expense of competitors. Rather, to invoke Remedy 8, there must be a causal connection between an adverse action taken by Microsoft and an action taken by a third party that supports or promotes a competing non-Microsoft product or service.

The Court of Appeals and the District Court catalogued a variety of conduct by

Microsoft that was designed to reward those who acceded to Microsoft's anticompetitive aims and punish those who did not. In particular, Microsoft has used its Windows monopoly to threaten various third parties unless they take actions that ultimately help protect Windows from competition. Since the Findings of Fact were entered by the District Court, Microsoft has engaged in similar and additional retaliatory conduct directed towards companies who either develop or support software platforms that compete with the Windows platform.

States' Remedy 8 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by preventing the continued use of a particular exclusionary practice, the use by Microsoft of threats and retaliation in response to the support of competing middleware and other platform threats.

I. Ban on Retaliation for Participation in Litigation – Remedy 9

Given Microsoft's propensity to take action against those who threaten its business interests, as well as the means readily available to Microsoft to do so, Remedy 9 is designed to prevent Microsoft from taking actions that adversely affect third parties based on the fact that the party participated in any aspect or phase of this litigation. Barksdale Direct Testimony (PX 1515) ("Barksdale Dir.") ¶ 107.

Specifically germane to States' Remedy 9, Anthony Fama from Gateway testified in the remedy proceedings that on numerous occasions after the liability trial, Microsoft made negative references to Gateway's participation in the liability phase of the case. *See* Fama Dir. ¶¶ 143-146; PX 1240A.

Like States' Remedy 8, Remedy 9 is *not* designed to prevent Microsoft from taking legitimate competitive actions that, if successful, might result in Microsoft making

competitive gains at the expense of competitors. Rather, to invoke Remedy 9, a third party must demonstrate a causal connection between an adverse action taken by Microsoft and the third party's participation in this litigation.

If Microsoft were permitted to retaliate against such participants, those parties, and potential future participants, will be less likely to participate in this and future proceedings. Thus, Remedy 9 will help to prevent a recurrence of practices likely to result in monopolization in the future by avoiding the creation of an environment where involvement in such proceedings brings adverse consequences.

J. Respect for User Choice of Default – Remedy 10

States' Remedy 10 provides OEMs and Third-Party Licensees with the ability to designate rival middleware products as the default middleware running on a Windows PC. It seeks to rein in Microsoft's control over what middleware obtains default status on Windows, recognizing that Microsoft can and has used its control over default settings to advantage its own middleware and to limit the effective distribution and use of rival middleware. In light of the fact that Microsoft has in some instances engineered its operating system to override the choice of end users who have selected non-Microsoft middleware as the default middleware, the remedy also seeks to ensure that Microsoft honors the choices of those who prefer non-Microsoft middleware as their default software.

Microsoft's primary argument against Remedy 10 has been that it will require Microsoft to extensively reengineer Windows. Gates Dir. ¶ 371. Microsoft's witnesses testified that the concept of "Default Middleware" does not exist in Windows, and so no mechanism currently exists to meet the requirements of Remedy 10. Gates Dir. ¶¶ 371-75; Jones Direct

Testimony (DX 1508) ("Jones Dir.") ¶¶ 123-24; Bennett Direct Testimony ("Bennett Dir.") ¶ 122.

Microsoft's engineering criticisms turn on a fundamental misreading of Remedy 10. Microsoft has assumed that Remedy 10 requires Microsoft to make all "middleware" replaceable as a default. Remedy 10, however, is only triggered if Microsoft affirmatively sets its own middleware as the default for performing some functionality. Mr. Gates testified that Windows "maintains a little database in the 'Windows Registry' that includes assignments of particular programs to particular file types" and that this is very identifiable in terms of determining where the Windows operating system has established default settings. Gates Dir. ¶ 373; Tr. 4919:24-4920:5 (Gates); Tr. 4919:14-18 (Gates) ("Yes, I can identify that."). Mr. Gates also testified that Microsoft could engineer Windows to allow end users a choice in situations where default middleware may be established. Tr. 4919:19-4921:1 (Gates). Because Remedy 10 only applies to instances where a "default" is established, Remedy 10 is technically feasible.

States' Remedy 10 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by restricting a practice, the overriding of default choices, that will predictably have the same adverse effects on potential platform threats as the conduct found anticompetitive.

K. No Agreements Not To Compete – Remedy 11

As the District Court's liability findings demonstrate, Microsoft's first response upon identifying a platform threat to its operating-system monopoly is often to attempt to persuade the company to alter its business plan so as not to compete as a platform with Microsoft's Windows operating system or middleware products. Microsoft has repeatedly

attempted to exact such agreements not to compete from upstarts such as Netscape and RealNetworks, as well as from larger, established technology companies such as Intel and Apple. *See Microsoft*, 84 F. Supp. 2d at 30-33, Findings Nos. 79-89 (Microsoft's attempt to dissuade Netscape from developing Navigator as a platform); *id*. at 37-38, Findings Nos. 111-14 (Microsoft's attempt to dissuade RealNetworks from developing platform software); *id*. at 34-36, Findings Nos. 94-103 (Microsoft's attempt to dissuade Intel from developing platform software); *id*. at 37-38, Findings Nos. 104-10 (Microsoft's attempt to dissuade Apple from developing platform software).

States' Remedy 11 seeks to prohibit similar conduct in the future by barring Microsoft from offering or providing consideration to companies that develop platform software in exchange for their agreement not to compete with Microsoft's platform software.

States' Remedy 11 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by restricting a practice, the entry into agreements limiting competition with platform software rivals, that will predictably have the same adverse effects on potential platform threats as the conduct found anticompetitive.

L. Open-Source Internet Explorer – Remedy 12

States' Remedy 12 requires Microsoft to make Internet Explorer available on an open-source basis. This accords with the primary focus of the liability trial, the threat that the Netscape Navigator Internet browser posed to Microsoft's operating system monopoly, and the multitude of illegal tactics that Microsoft employed to neutralize that threat. Microsoft's multi-pronged strategy was highly successful in both drastically reducing Netscape's market share and in establishing IE as the dominant browser. *Microsoft*, 84 F. Supp. 2d at 98-99, Finding No. 360;

id. at 100, Finding No. 364. By gaining control over the dominant browser, Microsoft "forestalled a serious potential threat to the applications barrier to entry," *Microsoft*, 84 F. Supp. 2d at 103, Finding No. 377, and thereby perpetuated its operating system monopoly.

The Internet browser has proven to be an enormously important application that becomes even more important as the number of PCs connected to the Internet continues to grow and as new uses of the Internet continue to develop. Shapiro Dir. ¶ 46. The fact that Microsoft now exercises sole control over the dominant Internet browser therefore enhances its ability to maintain its operating system monopoly in today's world of networked computing. *Id*. ¶¶ 46, 124.

For example, before Microsoft's campaign, Navigator was the dominant Internet browser, and, being cross-platform middleware, it ran on the Linux operating system as well as Windows. Tr. 1103:5-19 (Tiemann). IE does not. Tiemann Dir. ¶ 107. The fact that Linux, which is currently Microsoft's most significant competitor in the Intel-compatible PC operating system market is no longer able to offer its users access to the dominant Internet browser hurts Linux's competitive viability.

While Navigator and Java posed particularly strong threats to Microsoft's monopoly, other forms of middleware pose platform threats, as well. Microsoft's control over IE, the gateway to the Internet for most PC users today, gives it the power to influence which Internet-related middleware programs users adopt beyond the browser. As a result, Microsoft has the ability to use IE to neutralize the platform threat that may be posed by any such non-Microsoft middleware.

Microsoft's primary criticism of States' Remedy 12 is that it allegedly "confiscates" Microsoft's valuable intellectual property. Gates Dir. ¶ 386; Bennett Dir. ¶ 126;

Jones Dir. ¶ 64. Microsoft claims that as a result of this "confiscation," it would have no incentive to innovate and further improve its Browser software. Gates Dir. ¶ 396; Jones Dir. ¶ 64. In fact, Mr. Gates went so far as to claim that Remedy 12, in conjunction with States' Remedies 14 and 15, would lead to the end of innovation and the elimination of most of Microsoft's current employees. Tr. 4531:5-10 (Gates).

Microsoft's basic "confiscation" claim seems to be that it is simply not fair to require Microsoft to disclose and license such highly valuable intellectual property as its Browser code on a nondiscriminatory, royalty-free basis. What this "fairness" argument ignores, however, is the fact that Microsoft acquired control over the dominant browser wrongfully; this exclusive control is the "fruit" of Microsoft's illegal actions that must be denied to Microsoft under the Court of Appeals' opinion. *Microsoft*, 253 F.3d at 103.

Microsoft's argument that Remedy 12 confiscates its intellectual property and reduces its incentives to innovate is also wrong as a factual matter. Bill Gates claimed that Remedy 12 "would divest Microsoft of any significant opportunity to seek reward from its investment" in Browser software. Gates Dir. ¶ 396. This argument, of course, ignores the fact that Microsoft does not charge and never has charged customers separately for its Browser software, Shapiro Dir. ¶ 102. Under Remedy 12, Microsoft will be able to earn a return on its Browser investment just as it does today—through its licensing of the Windows operating system. Shapiro ¶ 102. Microsoft will continue to have the same strong incentives to develop Browser code that works well with Windows that drive its Browser investments today. *Id*.

States' Remedy 12 will serve to unfetter the market from Microsoft's anticompetitive practices, ensure that Microsoft does not benefit from the fruits of its statutory violation, and ensure that there remain no practices likely to result in monopolization in the

future. First, Remedy 12 unfetters the operating-system market from Microsoft's anticompetitive conduct by attempting to restore the applications barrier to entry to the level it would have achieved but for Microsoft's antitrust violations. *See* Shapiro Dir. ¶ 46. Microsoft's destruction of Navigator maintained the applications barrier to entry for Linux, Microsoft's primary competition in the monopolized desktop operating system market, in two ways: (1) Linux could no longer offer its customers access to the dominant browser; and (2) Linux lost the benefit of all of the Internet applications that would have been developed to Navigator, but were ultimately developed to IE instead. Tiemann Dir. ¶ 107; Tr. 1103:10-1104:9.

Second, it is clear that one of the primary "fruits" of Microsoft's statutory violations is its current position of complete control over the dominant Internet browser. And Remedy 12 ensures that there remain no practices likely to result in monopolization in the future. As discussed above, Microsoft's control over the dominant browser gives it the power to thwart a number of nascent threats to its operating system monopoly, including Web services, and non-Microsoft middleware. Making Microsoft's Browser software open source is the surest way to prevent Microsoft from further using its Browser software to maintain its monopoly illegally against these nascent threats

M. Java Distribution – Remedy 13

States' Remedy 13, which requires Microsoft to distribute a compliant version of the cross-platform Java middleware, remedies specific anticompetitive acts by Microsoft that were intended to eliminate, and succeeded in seriously crippling, the competitive threat posed by the Java platform. Remedy 13 will help re-establish the competitive threat posed by Java, which can enable computer applications to run on multiple operating systems without the need for porting, and will therefore help lower the applications barrier to entry that sustains Microsoft's

monopoly. *See Microsoft*, 253 F.3d at 55-56.

States' Remedy 13 directly addresses Microsoft's anticompetitive acts that undermined the Java platform and its ability to lower the applications barrier to entry. The Court of Appeals held that three separate Microsoft practices, intended "to contain and to subvert Java technologies," *Microsoft*, 253 F.3d at 58, violated the Sherman Act.

Java still has the potential to lower significantly the applications barrier to entry and thereby enable competition in the desktop operating system market over which Microsoft exerts monopoly power. *Microsoft*, 84 F. Supp. 2d at 29, Finding No. 74; Green Dir. ¶ 23. But broad distribution of compatible JREs is necessary for Java to realize its potential. Without a large base of users able to run Java programs, developers will have little incentive to create Java-based applications for the desktop (which, because they are written to cross-platform APIs, are able to run on multiple operating systems). Green Dir. ¶¶ 18, 96, 117; Shapiro Dir. ¶ 129.

Microsoft's primary criticisms of Remedy 13 are that it would expose Microsoft to intellectual property risk and would enable Sun to sabotage Microsoft. With regard to the former, Mr. Gates speculates that States' Remedy 13 "would expose Microsoft to substantial intellectual property infringement risk"—that if the JRE Microsoft were required to distribute violated any patent, Microsoft could be sued. Gates Dir. ¶ 405; *see also* Tr. 5019:4-5020:17 (Gates). This criticism ignores the plain terms of Remedy 13, which requires that the JRE be provided to Microsoft "on reasonable terms and conditions."

The latter criticism is similarly misguided. Mr. Gates' claim that "Sun could easily include specifications that would render any compliant Java runtime environment incompatible with Windows," Gates Dir. ¶ 406; *see also* Tr. 5022:14-5024:3 (Gates), is belied by the language of States' Remedy 13, which requires that the JRE distributed by Microsoft be "a

competitively performing Windows–compatible version of the Java runtime environment." A JRE that is incompatible with Windows, or excessively large, or of poor quality would not meet this condition, and Microsoft would not be obligated to distribute such a JRE under Remedy 13. Schwartz Dir. ¶¶ 151-152.

States' Remedy 13 achieves the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by reducing directly the applications barrier to entry in order to restore that barrier to the level it would have been absent any unlawful conduct.

Moreover, as noted above, Microsoft engaged in specific illegal conduct that was intended to eliminate the competitive threat posed by Java, and largely succeeded in this goal. Remedy 13 will ensure that Microsoft does not benefit from the fruits of its statutory violation, a stronger applications barrier to entry gained at the expense of the near-elimination of Java from desktops.

N. Porting of Office – Remedy 14

States' Remedy 14 is one of several provisions of the States' Remedy that seek directly to lower the applications barrier to entry and restore the potential for competition to what it would have been absent Microsoft's unlawful conduct—that is, not by focusing on enabling middleware platform threats, but rather by acting directly on the applications barrier to entry in the monopolized market, the market for PC operating systems. Remedy 14 requires Microsoft to license the right to port its Office suite of applications to operating systems other than Windows.

The District Court's finding that even the many open-source developers cannot "dissolve the [applications] barrier that prevents [Linux] from challenging Windows", *Microsoft*, 84 F. Supp. 2d at 24, Finding No. 51, remains true today. Tr. 1099:7-1105:12, 1116:2-1118:1,

1119:17-1120:6 (Tiemann). It is clear that these fundamentals persist and, if anything, have been worsened by Microsoft's unlawful monopoly maintenance.

The District Court previously concluded that access to Office was critical to the very survival of one rival desktop operating system, Apple. *Microsoft*, 84 F. Supp. 2d at 95, Findings Nos. 345-350. And there has been no diminution in the importance for any rival operating system to have access to Office if it is going to have even the potential to compete in the desktop operating system market. Michael Tiemann, the Chief Technology Officer of Red Hat Linux, explained the importance of Office as being necessary for an operating system to have the potential for competition, while not guaranteeing any level of actual competition or even the ability to compete. Tiemann Dir. ¶¶ 83-86, 88-99; Shapiro Dir. ¶¶ 110-12.

Under States' Remedy 14, Microsoft would retain the exclusive right to sell or license Office for Windows and the exclusive right to license Office for the Mac. Microsoft will not be forced to share any portion of its highly lucrative stake in these two markets. The remedy at issue simply provides for an auction and a payment to Microsoft for rights it now is not using and has never used. Tiemann Dir. ¶ 103; *see also* Shapiro Dir. ¶ 113; Tr. 1051:3-11; 1112:12-1114:5 (Tiemann).

Microsoft also argues that a licensee might run Office on a server that would allow the application in turn to be run on a Windows PC, thereby reducing the value of Microsoft's rights exclusively to license and sell Office for Windows. Gates Dir. ¶ 425. But by its language Remedy 14.b is limited to "licenses to sell Office for use on Operating Systems other than Windows and Macintosh . . . ." Microsoft remains free therefore to place any and all terms in the license agreement to restrict a licensee or any other third party from selling Office

for use ultimately on a Windows operating system, whether through a server or any other means. *See* Tiemann Dir. ¶ 103; *see also* Shapiro Dir. ¶ 113.

None of Microsoft's assertions as to why Remedy 14 would reduce its incentive and ability to innovate Office withstand scrutiny. Moreover, Microsoft would continue to have the sole right under Remedy 14 to sell Office for Windows, a product that accounted for $7 billion dollars of revenue just last year. Gates Dir. ¶ 411. And Microsoft has had the incentive and ability to innovate Office despite the fact that the most serious desktop rival, Apple, has had access to Office for the past thirteen years. Gates Dir. ¶¶ 421, 432.

States' Remedy 14 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by directly reducing the applications barrier to entry in order to restore that barrier to the level it would have been absent any unlawful conduct.

O. Necessary Intellectual Property Rights – Remedy 15

A number of the States' Remedies, including for example the disclosure provisions in Remedy 4, require Microsoft to disclose information to third parties. Much of this information is potentially subject to one or more forms of intellectual property protection, and thus third parties may require a license to actually make use of the information. Richards Dir. ¶ 101.

States' Remedy 15 ensures that other remedy provisions that require the licensing of intellectual property are not frustrated or undermined by Microsoft's insistence on onerous licensing terms and conditions. Remedy 15 does not provide an independent measure for remedying Microsoft's anticompetitive acts, or otherwise alter the substantive boundaries of other remedy provisions. Microsoft's disclosure of information intellectual property rights is

bounded by the carefully articulated options and alternatives specified by the other remedy provisions. Tr. 3292:18-3293:25; 3294:14-17 (Shapiro); DX 1530 at 176:4-177:4 (Greene).

Remedy 15 also makes clear that Microsoft does not need to license to third parties any intellectual property rights beyond those necessary to meet the specified purposes of the other remedy provisions. This ensures that Microsoft can take all necessary steps to otherwise protect its intellectual property, the great majority of which is not implicated by the States' Remedies.

As a general matter, the mandatory licensing of intellectual property is often required as part of a remedy addressing anticompetitive harm. Shapiro Dir. ¶ 85. Mandatory licensing is a particularly advantageous method of increasing competition in the marketplace because multiple parties may use the intellectual property asset without depriving others use of the same asset. *Id.* ¶ 86. This benefits consumers through the creation of a marketplace where licensees can more effectively compete while still allowing the monopolist to continue to compete. *Id.*

P. Limiting Manipulation of Industry Standards – Remedy 16

Industry standards establish uniformity with regard to a particular area of the computer industry, such as communications protocols, authentication, or file formats. Appel Dir. ¶ 144. Industry standards allow parties to develop products that will properly interoperate with others conforming to the same standard. Appel Dir. ¶ 144-45; Ledbetter Dir. ¶ 170. Standards represent one of the important methods for software developers to achieve cross-platform interoperability. Appel Dir. ¶ 145; DX 1067; Tr. 1134:18-1137:16 (Tiemann). Since most platform threats to Microsoft's Windows desktop monopoly are necessarily cross-platform, *Microsoft*, 253 F.3d at 53, standards may enable the development and growth of such threats.

Disclosure requirements are critical to interoperability, but additional requirements on standards are necessary to prevent, among other things, deception as to whether the disclosed information is consistent with cross-platform, standard specifications. Appel Dir. ¶ 146. A proper remedy in this case will ensure that Microsoft in fact adheres to an industry standard that it claims to support. *Id.* ¶¶ 146-47 (the States' Remedy addresses the remedial goals for this reason).

A Microsoft tactic in its efforts to unlawfully maintain its monopoly was to publicly embrace industry-wide, cross-platform standards while secretly frustrating interoperability. Microsoft particularly directed this tactic at the cross-platform threat posed by Java. As the District Court found, and the Court of Appeals affirmed, Microsoft purposely deceived software developers into believing that using its Java programming tools would result in the creation of cross-platform, compliant Java applications, when in fact the tools produced applications that were Windows-specific. *Microsoft*, 253 F.3d at 76-77.

In the remedy proceeding, Bill Gates testified that Microsoft strikes a balance "between doing things that are proprietary that might work against interoperability and doing things that promote interoperability based on the demands of the market." Tr. 4558:2-4558:8 (Gates); *see also* Tr. 4556:20-4557:3 (Gates). The record in the remedy proceeding reflects that Microsoft has frustrated interoperability through the use of undisclosed modifications or extensions to industry standards.

An effective remedy must ensure that Microsoft cannot publicly commit to interoperability and standards and simultaneously undermine that commitment in pursuit of the protection of its monopoly. Truthful disclosure by Microsoft with regard to its use of standards will also assist developers to request necessary additional disclosures under States' Remedy 4,

thus fostering cross-platform interoperability. *Cf.* Appel Dir. ¶ 143.

States' Remedy 16 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by preventing the continued use of a particular exclusionary practice -- deception as to the cross-platform capabilities of Microsoft's Java tools.

Remedy 16 also unfetters the market and prevents a recurrence of practices likely to result in monopolization by preventing the use of particular practices, the use of claimed adherence to, and proprietization of, industry standards to frustrate cross-platform interoperability, that will predictably have the same adverse effects on potential platform threats as the conduct found anticompetitive.

Q. Enforcement – Remedies 17-21

Remedies 17-21 collectively serve the critical goals of guaranteeing effective enforcement. The effectiveness of the substantive remedial provisions of the Final Judgment directly correlates to their ability to be effectively enforced. Without an effective enforcement mechanism, the remedial objectives set forth by the Court of Appeals and are unlikely to be met, no matter what the substantive provisions may say. The enforcement mechanisms contained in the States' Remedy (Provisions 17-21) are designed to address these issues.

1. Internal Compliance

States' Remedy 17 creates an active and comprehensive internal compliance program by giving those who oversee Microsoft's compliance sufficient authority and responsibility to monitor Microsoft's obligations. Unlike Microsoft's Remedy, the internal Compliance Officer created by Remedy 17 is cloaked with some measure of independent authority and job security ensuring that Microsoft's own internal compliance is robust.

States' Remedy 17 will prevent a recurrence of practices likely to result in monopolization in the future by recognizing the importance of an internal compliance mechanism in ensuring that potential future anticompetitive acts are discouraged, and if they occur, quickly and efficiently identified.

2. Special Master

Through the creation of a Rule 53 Special Master, (assisted by an advisory committee of technical and economic experts), Remedy 18 creates a procedure whereby the Special Master can review complaints, weed out frivolous disputes, and where resolution is not possible, file a report noting the relevant facts and the issues for the Court's consideration. Most importantly, the procedures set forth in Remedy 18, (unlike those in Microsoft's Remedy), ensure that this process moves quickly therefore allowing any relief granted to have its intended effect.

The Rule 53 Special Master created by Remedy 18 fits within the construct set forth by the Court of Appeals in *United States v. Microsoft Corp. (Microsoft II)*, 147 F.3d 935 (D.C. Cir. 1998), to justify a reference to a Special Master. First, the wide variety of conduct found to be unlawful, the scope of the remedies necessary to address such conduct and the characteristics of the industry at issue amount to an "exceptional condition" justifying the reference. Second, unlike *Microsoft II*, Microsoft's rights have already been determined through this litigation and the adoption of the Final Judgment. Therefore, by assisting the Court in enforcing the Final Judgment, the Special Master will not be determining the rights of Microsoft – the Court has already done so. Lastly, matters of interpretation, to the extent they arise, are merely noted but not resolved by the Special Master, thereby allowing the Court to make that determination in the first instance.

In sum, States' Remedy 18 provides internal and external incentives for Microsoft to comply; enhances the speed with which violations are detected, investigated and remedied; reduces information asymmetries detrimental to enforcement; and eliminates time-consuming, protracted litigation by streamlining disputes in a manner that allows for timely and effective relief without burdening the demand on judicial resources. Remedy 18 will therefore prevent a recurrence of practices likely to result in monopolization in the future by creating an effective enforcement mechanism that ensures prompt dispute resolution.

By contrast, Microsoft's Remedy contains no meaningful enforcement mechanism. The Technical Committee created by IV.D of Microsoft's Remedy is not an enforcement vehicle—it is simply a voluntary dispute resolution procedure – the results of which are not independently enforceable. In addition, the restriction imposed on membership on the Technical Committee reduce the committee's ability to resolve complex technical disputes or assist the Department of Justice with complex technical matters relating to enforcement. The only enforcement mechanism in Microsoft's Remedy—an enforcement action by the Department of Justice or the Settling States—is plagued with concerns regarding timeliness, rendering it ineffective as an enforcement mechanism.

3. Sanctions

Unlike Microsoft's Remedy, States Remedy 19 contains sufficient sanctions to ensure that Microsoft does not benefit by delay or non-compliance, thereby allowing the substantive remedial provisions to have their intended effect.

By creating incentives for Microsoft to promptly comply with its obligations under the Final Judgment, Remedy 19 will thus prevent a recurrence of practices likely to result in monopolization in the future.

4. Notice Regarding Investments

States' Remedy 20 will achieve the complementary objectives of unfettering the market from Microsoft's anticompetitive practices and preventing a recurrence of practices likely to result in monopolization in the future by preventing the use of a practice, the use of strategic investments to limit competition, that will predictably have the same adverse effects on potential platform threats as the conduct found anticompetitive.

5. Term

Microsoft has held a dominant position in the operating system market for more than thirteen years. *Microsoft*, 84 F. Supp. 2d at 19, Finding No. 35. As noted previously, the conduct at issue in this case dates back to at least 1995, seven years ago. *Microsoft*, 253 F.3d at 64 (quoting *Microsoft*, 84 F.Supp.2d at 50, Finding No. 160); Tr. 4534:3-9 (Gates). In order to unfetter the market from the anti-competitive conduct, a term that exceeds the length of time since the onset of the anticompetitive conduct, but is shorter that the period of market dominance, is reasonable.

Given the network effects and the formidable applications barrier to entry present in the software industry competitive threats to Microsoft's monopoly, do not arise every day and, when they do, they will likely take significant time to have an impact on the market. In light these market realities there is no reason for an effective forward-looking remedy to depart from the standard 10-year term of antitrust decrees.

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